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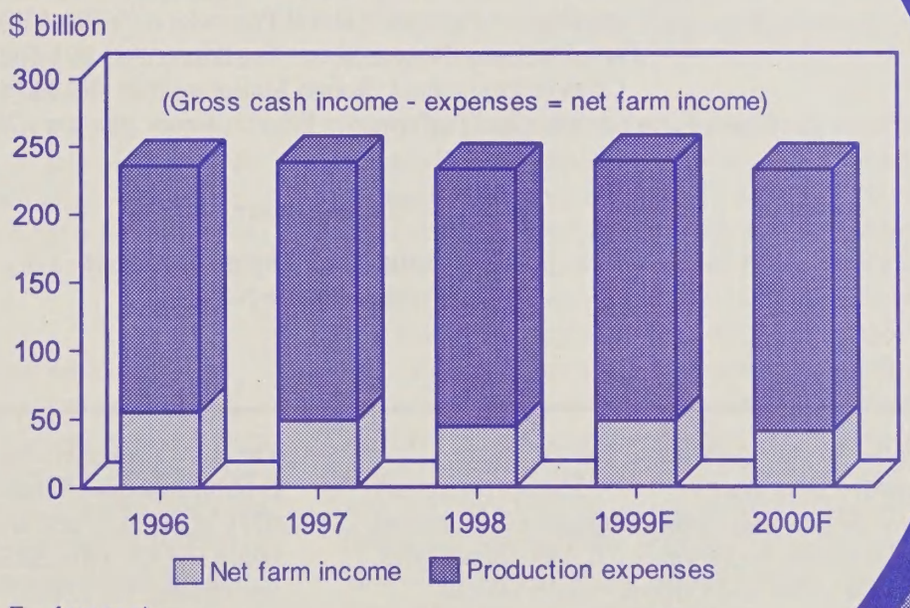
Agricultural Income and Finance

Situation and Outlook Report

Decline in 2000 U.S. Farm Income Tempered by Government Payments



F = forecast.

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Highlights

Abundant supplies, low commodity prices, and government assistance figure prominently in the first calendar year 2000 income forecasts. Net farm income is forecast at $40.4 billion in 2000, down $7.6 billion from the preliminary estimate of $48.1 billion for 1999. Net cash income is forecast at $49.7 billion, $9.4 billion less than the preliminary estimate for 1999 of $59.1 billion. From a longer term perspective, net farm income is forecast to be 88 percent of the 1990-99 average, with net cash income at 90 percent of the 1990-99 average.

The impact of low commodity prices is reflected in the $1.7-billion drop in total crop receipts from 1999 to $93.3 billion, the lowest since 1994. Year 2000 receipts are forecast down $2.1 billion for major field crops, but up $1.2 billion for fruits, vegetables, and greenhouse/nursery products. Livestock receipts will increase for the second consecutive year based on continued growth in the poultry sector and modest improvement in cattle and hogs. Dairy receipts are expected to fall nearly $2 billion from 1999 to their lowest level since 1997.

Government assistance has played an important role in stabilizing gross and net income for the U.S. farm sector. For 2000, government payments are forecast at $17.2 billion, contributing 7.8 percent of gross cash income. This is $5.5 billion below 1999's estimated record of $22.7 billion. Continued low prices for major crops generated a substantial increase in 1999 loan deficiency payments (LDPs) from 1998 and will continue to do so in 2000. LDPs compensate farmers for the difference between posted county prices and Commodity Credit Corporation loan rates, and are forecast at $7.9 billion for 2000. LDPs are estimated at $6.9 billion in 1999, compared with $1.8 billion in 1998. The forecast for direct government payments in 2000 also includes $2.8 billion in emergency assistance compensation from the Fiscal Year 2000 Agricultural Appropriations legislation, as well as payments from production flexibility contracts and conservation and other programs.

Forecast at $192.3 billion for 2000, total production expenses will have risen less than 1 percent for the third straight year after rising more than 4 percent each year from 1993 to 1997. A large part of this leveling-off has been due to the fall in cash grain prices, which led to lower feed costs to livestock producers. Total production expenses in 2000 will equal 84 percent of gross receipts and exceed 90 percent of gross receipts less government payments. These would be the tightest operating margins since 1980-84.

Despite an increase in debt in recent years, farm business balance sheets have improved steadily throughout the 1990s, especially since 1992. Equity positions have generally improved, and debt-to-asset ratios have declined as the increase in farm business debt has been more than offset by a rise in the value of farm assets. Farm debt is anticipated to stand at $172.5 billion by the end of 2000, down slightly from 1999. With farm assets forecast at $1,073.5 billion for 2000, farm equity should reach $901 billion by the end of 2000. At this level, farm equity would be $7.2 billion above 1999 and over $332.2 billion greater than in 1996.

In 2000, a relatively large decline in income from farming will be partially offset by increasing off-farm income, leaving average farm household income forecast at $59,350. This is down from the $61,363 estimated for 1999, but remains similar to the 1998 average of $59,734. Earnings of the operator's household from off-farm sources have been steadily increasing, while the earnings from farming activities have been volatile over time.

The persistence of low commodity prices in 2000 will aggravate cash-flow problems for farm businesses in several regions. Relative to 1998, the largest declines in average net cash income are expected in the Mississippi Portal, Eastern Uplands, Southern Seaboard, and the Heartland. These areas will be hard hit by dramatic declines in prices for rice and tobacco as well as continued low prices for corn and soybeans. Higher cattle prices and relatively cheap feed should boost average net cash income in the Northern Great Plains and Prairie Gateway regions relative to the 1994-98 average. For most regions, at least one in four farm businesses will not cover cash expenses. The exceptions are the Heartland and the Northern Crescent.

The story for net cash income is basically the same for all commodity specialties. A stable or, at best, a very modest increase in livestock receipts will not offset the continued erosion of crop receipts, a reduction in government payments from their historic highs of 1999, and a continued modest rise in production expenses. While row-crop farms will sustain the largest drops in net income, specialty crop and livestock farms will also experience reductions from 1999. When compared with the average income earned during 1994-98, a slightly altered picture emerges. Income for major row-crop farms is less than the previous 5-year average, but farms with the largest reductions include tobacco, cotton and peanut farms, general crop farms, and soybean farms. Specialty crop and livestock farms (apart from hog operations) are expected to have incomes in 2000 that exceed their 1994-98 average. Livestock farms will have the largest increase of any farm type.

Reduced income in 2000 will require farmers to manage tighter cash flows. A higher proportion of debt service capability will be used, eliminating credit reserves and exposing a larger share of farms to potential debt repayment problems. Lower incomes rather than substantially rising debt levels or falling asset values will be the key factor that may contribute to rising debt service problems. The greatest increase in use of debt service capacity will be for major row-crop farms, especially those that specialize in wheat and corn. Regionally, a relatively high incidence of debt repayment problems is expected in the Mississippi Portal, Prairie Gateway, and Northern Great Plains, where debt repayment difficulty has persisted over the last several years.

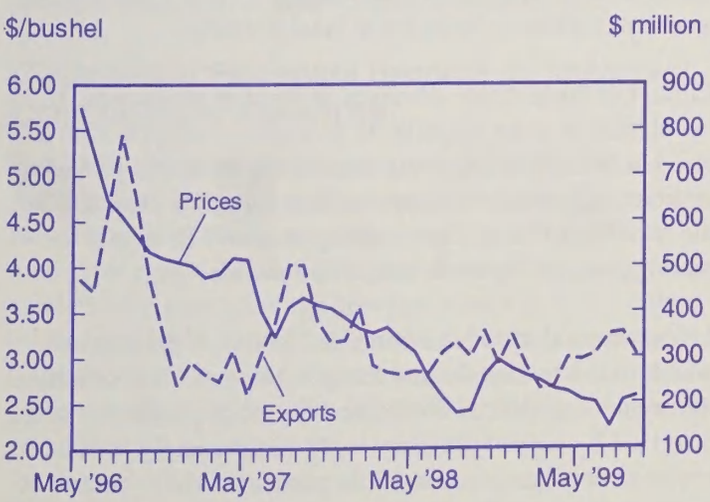
With Low Commodity Prices, Loan Deficiency Payments Support Farm Income

Supplies of agricultural commodities are large and prices are low. Net farm income for 2000 is forecast at $40.4 billion, down $7.6 billion from the current 1999 estimate.

The key factor driving the initial income forecast for the year 2000 is the cumulative effects of 4 consecutive years of large harvests in the world's major agricultural producing countries. By historical standards, this period has been unusually favorable for crop production. Not only has there has been little adverse weather, but rainfall has been generally abundant and timely. In late 1997 and 1998, rising world commodity supplies in the face of weak international demand reduced farm prices and the value of U.S. farm exports (figure 1).

At the end of 1999, supplies of most agricultural commodities remain large, both from stocks carried over from 1998 and from large crop harvests around the world. The outlook for farm product demand suggests little or no growth in the near term. Without a change in demand or supply, prices will likely remain unchanged. In 1998 and 1999, the U.S. government enacted legislation that increased assistance to farmers, thereby helping to maintain farm income and temper financial hardship for many producers. Large supplies, relatively low commodity prices, and increased government assistance in the past 2 years provide a context in which to consider the first calendar year 2000 income forecasts.

Figure 1
Monthly wheat exports and domestic prices, 1996-99
As export demand has fallen, prices have tumbled



Source: Economic Research Service, USDA.

Net farm income is forecast at $40.4 billion in 2000, down $7.6 billion from the preliminary estimate of $48.1 billion for 1999 (table 1). The drop is due to diminished expectations for near-term increases in many commodity prices and a retreat in government payments from the historic high expected in 1999. **Net cash income** in 2000 is forecast at $49.7 billion, $9.4 billion less than the preliminary 1999 estimate of $59.1 billion. Prices for major crops will likely remain low, but expenses should remain stable and perhaps decline as farmers adjust production practices to reduce costs and achieve operational efficiencies.

Total crop receipts for 2000 are forecast at $93.3 billion, $1.7 billion below 1999, and the lowest since 1994 (table 2). The reduction stems largely from low commodity prices. Receipts will be down $2.1 billion for major field crops—food grains, feed grains, cotton, oil crops, and tobacco—but up $1.2 billion for fruits, vegetables, and greenhouse/nursery crops. Due to continued soft prices, loan deficiency payments (LDPs) to producers of major field crops, such as corn and soybeans, are forecast at $7.9 billion for 2000. In 1999, about $6.9 billion of direct payments were for loan deficiency payments. LDPs, which help compensate farmers for the difference between posted county prices and Commodity Credit Corporation loan rates, increase as posted county prices decline.

Placing the 2000 income forecast into a longer-term perspective, net farm income is forecast to be 88 percent of its 1990-99 average, with net cash income at 90 percent of its decade average. Under current legislation without additional supplemental funding, government payments are expected to decline $5.5 billion in 2000, which is nearly the difference between the current 2000 forecast and the decade average.

The value of "final crop output" is a key barometer for tracking the causes of the below-average income forecast for the U.S. farm sector in 2000. The value of crops harvested is forecast down about 2 percent in 2000, following a decline of 7 percent in 1999 and 9 percent in 1998, resulting in a 3-year decline of $19 billion.

In 1998 and 1999, government payments, with additional emergency assistance, were sufficient to maintain net farm income at, and even above, the decade average. The majority

Table 1--Income statement for U.S. farm sector, 1996-2000F

	1996	1997	1998	1999P	2000F	Change from 1999 to 2000	
			$ billion			$ billion	Percent
Cash income statement:							
1. Cash receipts	199.1	207.6	196.8	191.9	189.9	-2.1	-1.1
Crops 1/	106.2	111.1	102.2	95.1	93.3	-1.7	-1.8
Livestock	93.0	96.5	94.5	96.9	96.5	-0.3	-0.3
2. Direct Government payments	7.3	7.5	12.2	22.7	17.2	-5.5	-24.3
3. Farm-related income 2/	11.0	12.4	13.8	14.4	14.1	-0.3	-2.1
4. Gross cash income (1+2+3)	217.4	227.5	222.8	229.1	221.1	-7.9	-3.5
5. Cash expenses 3/,4/	159.9	169.0	167.8	170.0	171.5	1.5	0.9
6. NET CASH INCOME (4-5)	57.5	58.5	55.0	59.1	49.7	-9.4	-15.9
Farm income statement:							
7. Gross cash income (1+2+3)	217.4	227.5	222.8	229.1	221.1	-7.9	-3.5
8. Nonmoney income 5/	10.3	10.6	11.3	11.5	11.6	0.1	0.9
9. Inventory adjustment	8.0	0.5	-1.0	-1.4	-0.1	na	na
10. Total gross income (7+8+9)	235.7	238.7	233.1	239.1	232.7	-6.5	-2.7
11. Total expenses	180.8	190.0	189.0	191.1	192.3	1.2	0.6
12. NET FARM INCOME (10-11)	54.9	48.6	44.1	48.1	40.4	-7.6	-15.9

P = preliminary. F = forecast.

1/ Includes CCC loans. 2/ Income from custom work, machine hire, recreational activities, forest product sales, and other non-commodity farm sources.

3/ Excludes depreciation and perquisites to hired labor. 4/ Excludes farm households. 5/ Value of home consumption of farm products plus the imputed rental value of operator dwellings.

Totals may not add due to rounding.

of the payments came from three government programs: production flexibility contract payments (sometimes referred to as Agricultural Market Transition Act, or AMTA payments), loan deficiency payments (LDPs), and emergency supplemental appropriations enacted in October 1998 and October 1999. The forecast for 2000 includes modestly declining production flexibility payments and rising LDP payments. Therefore, the markedly smaller forecast for government payments for 2000 is due to reduced emergency supplemental appropriations.

The year 1996 has often been used as a benchmark in evaluating the current income situation. However, the decade average is a more meaningful comparison, because historical crop yields and market prices have exhibited substantial volatility and the inclusion of conditions over a longer time frame smooths that volatility. In addition, 1996 saw record high prices for a number of commodities. As can be seen in table 1, the 2000 forecast for the value of crop production is 2 percent below the decade average and the value of livestock production is 6 percent above the decade average. The value of the sector's final output, which includes forestry and other farm-related income, exceeds its decade average by 4.1 percent. Commodity prices have declined since 1996, but have been partially offset by higher production, giving farms more to sell, albeit at lower prices.

Expanding World Production of Agricultural Commodities

The world's major agricultural production regions have not endured substantial drought conditions for several years, which is a typical. As a consequence, supplies of most crops and livestock commodities have been abundant worldwide since 1996. Increased competition for export markets has depressed prices of not only grains and oilseeds, but also fruits, with apples being a prime example.

Brazil is a large producer of soybeans and Argentina is a major producer of soybeans, wheat, and corn. Both compete with the United States for export markets. Australia competes with the United States as a wheat exporter. All three countries lie in the Southern Hemisphere, which for several years has had favorable weather for agricultural production. With the 6-month difference in the farming cycles between the two hemispheres, large harvests of feed crops, food grains, and oilseeds have been coming to world markets on a nearly continuous basis for at least 4 years.

China has made major advances in its crop production. It has shifted from an importer to an exporter of corn. China also has become a major exporter of apples and is providing serious competition in Asian markets for apple exporters on the U.S. West Coast. The resulting excess U.S. supply is putting pressure on apple prices nationwide.

Livestock producers have benefited from low grain prices, which translate directly into lower feed costs. In addition, the continuing shift to specialized livestock production characterized by larger operations within increasingly confined environments has accelerated. In particular, the evolution of the technology for hog and dairy production is following the lead of the poultry industry and is driven by the same eco-

Table 2--U.S. farm sector cash receipts from sales of agricultural commodities, 1996-2000F

	1996	1997	1998	1999P	2000F	Change from 1999 to 2000	
			$ billion			$ billion	Percent
Crop receipts:							
Food grains	10.7	10.1	8.7	7.4	6.7	-0.7	-9.0
Wheat	9.1	8.4	7.0	5.9	5.7	-0.3	-4.9
Rice	1.6	1.7	1.7	1.4	1.1	-0.4	-25.8
Feed crops	27.2	27.1	22.9	20.6	19.5	-1.1	-5.3
Corn	20.7	19.9	17.1	15.2	14.2	-1.0	-6.6
Barley, oats, and sorghum	2.6	2.5	1.7	1.4	1.4	-0.1	-4.1
Hay	3.9	4.7	4.1	3.9	3.9	0.0	-0.8
Oil crops	16.3	19.7	17.2	14.6	14.3	-0.3	-1.9
Soybeans	14.8	18.0	15.4	12.9	12.7	-0.1	-1.1
Peanuts	1.0	1.0	1.0	1.1	1.0	-0.1	-7.4
Other oil crops							
Cotton (lint and seed)	7.0	6.3	6.0	5.0	5.3	0.4	7.7
Tobacco	2.8	2.9	3.0	2.2	1.8	-0.4	-19.9
Fruits and nuts	11.9	13.1	11.7	12.5	12.6	0.1	0.7
Vegetables	14.4	15.0	15.3	15.1	15.7	0.6	3.9
All other crops	15.8	16.9	17.3	17.8	17.5	-0.3	-1.8
Greenhouse and nursery	10.8	11.8	12.1	12.9	13.4	0.5	3.9
TOTAL CROPS	106.2	111.1	102.2	95.1	93.3	-1.7	-1.8
Livestock receipts:							
Red meats	44.2	49.7	43.6	46.9	47.7	0.8	1.8
Cattle and calves	31.0	36.0	33.7	37.2	37.5	0.3	0.8
Hogs	12.6	13.1	9.4	9.2	9.7	0.6	6.2
Sheep and lambs	0.6	0.6	0.5	0.5	0.4	0.0	-9.0
Poultry and eggs	22.4	22.2	22.8	22.8	23.6	0.7	3.2
Broilers	13.9	14.2	15.1	15.0	15.9	0.8	5.5
Turkeys	3.1	2.9	2.7	2.9	3.0	0.0	1.0
Eggs	4.8	4.5	4.3	4.2	4.1	-0.1	-3.0
All dairy	22.8	20.9	24.3	23.4	21.4	-1.9	-8.2
Miscellaneous livestock	3.6	3.7	3.8	3.8	3.8	0.0	0.0
TOTAL LIVESTOCK	93.0	96.5	94.5	96.9	96.5	-0.3	-0.3
TOTAL RECEIPTS	199.1	207.6	196.8	191.9	189.9	-2.1	-1.1

P = preliminary. F = forecast.

nomic forces. Under highly automated operating conditions, feed, nutrients, and medicines are brought to the animals. This requires less effort (calories consumed) by the animals, all of which contributes to a rise in pounds of gain to a pound of feed. Labor requirements are also reduced.

Government Payments Become an Important Component of Revenues

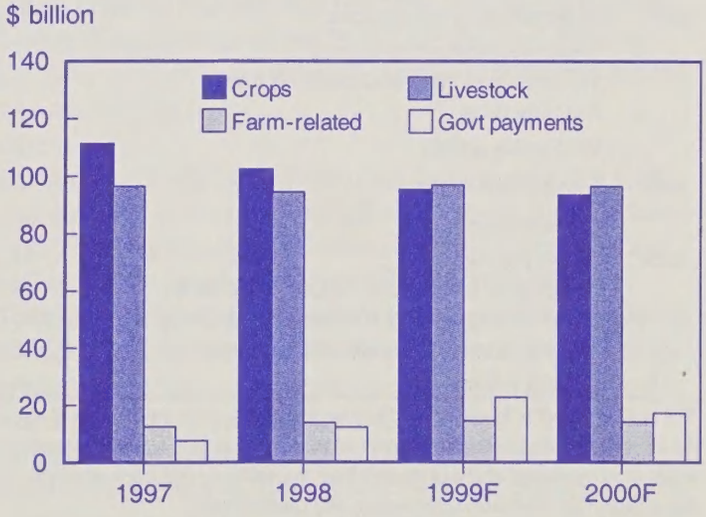
For 2000, government payments are forecast to drop to $17.2 billion, 7.8 percent of gross cash income. The preliminary estimate of total government payments for calendar year 1999 equals $22.7 billion, which would be the highest amount ever, exceeding the previous record of $16.7 billion in calendar 1987. In 1987, government payments were equivalent to 10 percent of gross cash income, falling to 5.5 percent in 1998. As forecast for 1999, government payments are almost 9.9 percent of gross cash income.

The government's assistance programs play an important role in stabilizing gross and net incomes for the U.S. farm

Figure 2

Sources of farm cash receipts, 1997-2000

Crop receipts fall, while direct government payments rise



F=Forecast.

Source: Economic Research Service, USDA.

Table 3--Value added to the U.S. economy by the agricultural sector via the production of goods and services, 1996-2000F 1/

Item	1996	1997	1998	1999P	2000F	Change from 1999 to 2000		1990-99 average
			$ billion			$ billion	Percent	$ billion
Final crop output	115.4	112.1	102.0	95.0	93.5	-1.5	-1.6	95.6
Food grains	10.7	10.1	8.7	7.4	6.7	-0.7	-9.0	8.8
Feed crops	27.2	27.1	22.9	20.6	19.5	-1.1	-5.3	22.1
Cotton	7.0	6.3	6.0	5.0	5.3	0.4	7.7	5.9
Oil crops	16.3	19.7	17.2	14.6	14.3	-0.3	-1.9	14.9
Tobacco	2.8	2.9	3.0	2.2	1.8	-0.4	-19.9	2.8
Fruits and tree nuts	11.9	13.1	11.7	12.5	12.6	0.1	0.7	11.0
Vegetables	14.4	15.0	15.3	15.1	15.7	0.6	3.9	13.8
All other crops	15.8	16.9	17.3	17.8	17.5	-0.3	-1.8	15.1
Home consumption	0.1	0.1	0.1	0.1	0.1	0.0	-1.8	0.1
Value of inventory adjustment 2/	9.1	0.9	-0.4	-0.2	0.0	0.2	na	1.1
Final animal output	92.1	96.5	94.3	96.0	96.8	0.8	0.8	91.3
Meat animals	44.2	49.7	43.6	46.9	47.7	0.8	1.8	47.6
Dairy products	22.8	20.9	24.3	23.4	21.4	-1.9	-8.2	20.8
Poultry and eggs	22.4	22.2	22.8	22.8	23.6	0.7	3.2	19.1
Miscellaneous livestock	3.6	3.7	3.8	3.8	3.8	0.0	0.0	3.2
Home consumption	0.3	0.4	0.3	0.4	0.4	0.0	-0.3	0.4
Value of inventory adjustment 2/	-1.1	-0.4	-0.6	-1.2	-0.1	1.1	na	0.1
Services and forestry	20.8	22.5	24.6	25.4	25.2	-0.2	-0.8	19.4
Machine hire and customwork	2.1	2.6	2.3	2.3	2.4	0.1	4.1	2.1
Forest products sold	2.6	2.9	2.8	2.9	2.9	0.0	0.3	2.5
Other farm income	6.2	6.9	8.7	9.2	8.8	-0.4	-4.5	5.9
Gross imputed rental value of farm dwellings	9.9	10.1	10.8	11.0	11.1	0.1	1.0	9.0
Final agricultural sector output	228.4	231.2	220.8	216.4	215.5	-0.9	-0.4	206.4
less: Intermediate consumption outlays	113.2	120.9	118.7	119.5	121.3	1.8	1.5	106.9
Farm origin	42.7	46.9	44.9	45.2	44.6	-0.6	-1.4	42.1
Feed purchased	25.2	26.3	25.0	24.1	23.8	-0.3	-1.2	22.8
Livestock and poultry purchased	11.3	13.8	12.7	13.9	13.5	-0.4	-2.6	13.5
Seed purchased	6.2	6.7	7.2	7.2	7.2	0.0	0.3	5.8
Manufactured inputs	28.6	29.2	28.3	29.2	30.2	0.9	3.2	25.7
Fertilizers and lime	10.9	10.9	10.7	10.4	10.5	0.0	0.4	9.6
Pesticides	8.5	9.0	9.1	9.1	9.1	-0.1	-0.8	7.6
Petroleum fuel and oils	6.0	6.2	5.6	6.4	7.4	1.0	16.4	5.7
Electricity	3.2	3.0	2.9	3.3	3.2	-0.1	-2.2	2.9
Other intermediate expenses	41.8	44.9	45.5	45.1	46.5	1.4	3.2	39.1
Repair and maintenance of capital items	10.3	10.4	10.4	10.3	10.5	0.3	2.5	9.5
Machine hire and customwork	4.7	4.9	5.5	5.5	5.7	0.2	3.2	4.6
Marketing, storage, and transportation	6.9	7.1	6.7	6.8	7.1	0.3	4.1	6.1
Contract labor	2.1	2.6	2.4	2.5	2.5	0.1	2.2	2.0
Miscellaneous expenses	17.8	19.8	20.5	20.0	20.7	0.7	3.4	17.0
plus: Net government transactions	0.2	0.2	4.6	15.3	9.6	-5.6	-36.8	3.7
+ Direct government payments	7.3	7.5	12.2	22.7	17.2	-5.5	-24.3	10.6
- Vehicle registration and licensing fees	0.4	0.5	0.5	0.5	0.5	0.0	1.5	0.4
- Property taxes	6.7	6.9	7.2	6.9	7.0	0.1	1.5	6.5
Gross value added	115.4	110.4	106.7	112.2	103.8	-8.3	-7.4	103.2
less: Capital consumption	19.2	19.3	19.4	19.2	18.9	-0.3	-1.5	18.8
Net value added	96.2	91.1	87.2	92.9	84.9	-8.0	-8.6	84.4
less: Factor payments	41.3	42.5	43.1	44.9	44.5	-0.4	-0.9	38.6
Employee compensation (total hired labor)	15.3	16.0	16.9	17.7	17.9	0.2	1.3	14.4
Net rent received by nonoperator landlords	13.0	12.9	12.6	13.6	12.9	-0.8	-5.6	11.7
Real estate and nonreal estate interest	13.0	13.5	13.6	13.5	13.7	0.2	1.2	12.5
Net farm income	54.9	48.6	44.1	48.1	40.4	-7.6	-15.9	45.8

P = preliminary. F = forecast. 1/ Final sector output is the gross value of the commodities and services produced within a year. Net value added is the sector's contribution to the national economy and is the sum of the income from production earned by all factors of production. Net farm income is the farm operators' share of income from the sectors' production activities. The concept presented is consistent with that employed by the Organization for Economic Cooperation and Development.

2/ A positive value of inventory change represents current-year production not sold by December 1. A negative value is an offset to production from prior years included in current-year sales.

Table 4--Direct government payments, 1996-2000F

	1996	1997	1998	1999P	2000F	Change from 1999 to 2000	
			$ million			$ billion	Percent
Total direct payments 1/	7,340.0	7,495.0	12,220.0	22,704.2	17,190.0	-5.5	-24.3
Commodity programs	-732.0	-575.0	-5.0	na	na	0.0	na
Production flexibility (AMTA)	5,973.0	6,120.0	6,001.0	5,109.4	4,924.0	-0.2	-3.6
Loan deficiency	na	na	1,792.0	6,874.0	7,866.0	1.0	14.4
CRP and other	2,099.0	1,950.0	1,623.0	1,989.3	1,965.8	0.0	-1.2
Emergency assistance 2/	0.0	0.0	2,809.0	8,731.5	2,434.2	-6.3	-72.1

P = preliminary. F = forecast. na = not applicable

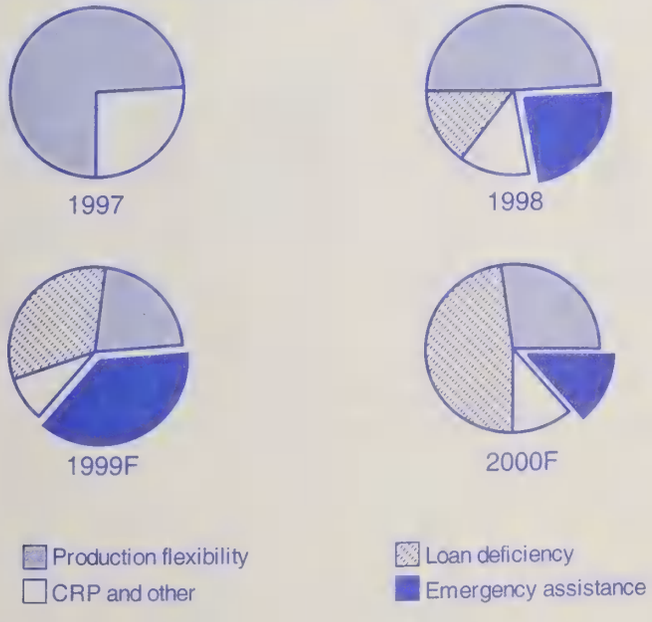
1/ Includes only those funds paid directly to farmers within the calendar year.

2/ Includes payments to farmers as a consequence of Emergency Assistance Legislation enacted in both October 1998 and October 1999.

sector and particularly for grain, soybean, and cotton farms affected the most by U.S. and world production events. As described earlier, the Loan Deficiency Program essentially helps establish a minimum price for the applicable commodities. Once the market price falls below the loan rate, the rise in LDP payments closely approximates the decline in cash receipts (sales). Production flexibility payments and the market loss component of emergency aid, which is generally paid as a proportion of the production flexibility payments and to the same recipients, serve to stabilize revenues for those farmers with production flexibility contracts. Conservation and other programs provide rental income to certain farmers who have contracts under those programs. In addition, there are disaster payments in the form of crop insurance indemnities (to those persons with contracts) and for 1999 there was a buy-down of the premiums charged farmers. The premium buy-down continues in 2000.

Figure 3

Government payments by type



F=Forecast.

Source: Economic Research Service, USDA.

Continued low prices for major commodities generated a notable increase in 1999 loan deficiency payments from 1998 and will continue to do so in 2000 given the unrelenting pressure on prices. Loan deficiency payments for 1999 are estimated at $6.9 billion, compared with $1.8 billion in 1998. ERS forecasts, based on current price expectations, indicate loan deficiency payments will rise further in 2000 to $7.9 billion. Except for small payments for rice and cotton, loan deficiency payments were virtually nonexistent in the 1990s prior to 1998, but lower prices in 1998 and 1999 have made them a significant component of direct government payments to the farm sector.

Loan deficiency payments for grains and oilseeds are based upon posted county prices compared with the loan rate for each area. Farmers may request loan deficiency payments equivalent to the difference between the posted county price and the loan rate for the quantity they have produced. In any given calendar year, some areas may be eligible for loan deficiency payments and others may not. For the 1998 corn crop, the average payment was 18 cents per bushel and payments were made on 58 percent of production. Both a higher average payment due to lower market prices and a greater share of production covered in 1999 gave a significant boost to loan deficiency payments for corn and other major commodities and will push the 2000 payments even higher. Some portion of the 2000 LDP forecast could be taken by farmers as marketing loan gains, which are treated as cash receipts.

Production flexibility payments set forth in the 1996 Farm Act continue to trend downward in 1999 and 2000, as specified in the legislation. Production flexibility payments are authorized by fiscal years, which begin on October 1. Farmers now have the option of taking up to 100 percent of the total payment prior to December 31, or taking all or the unclaimed portion of their payment in the forthcoming calendar year. Consequently, the forecast of $5.1 billion in production flexibility payments for 1999 comes from amounts budgeted for fiscal years 1999 and 2000. Based on historical data, the forecast presumes that about 20 percent of fiscal year 2000's appropriated funds will be taken by

December 31, 1999, and the remainder will fall within the next calendar year.

The "Omnibus Consolidated and Emergency Supplemental Appropriations for Fiscal Year 1999 Act" of October 1998 included about $5.6 billion in direct government payments for the farm sector. About half of that amount was intended as supplemental payments that helped offset the drop in cash receipts. An amount of $2.8 billion was disbursed in one-time supplemental production flexibility contract payments by the end of calendar 1998. The remainder was appropriated as disaster payments and disbursed during calendar 1999 to assist farmers who had suffered crop losses due to severe climatic conditions in 1998 and prior years.

A similar emergency supplemental appropriation for fiscal year 2000 included $8.7 billion to aid farmers adversely affected by market and weather conditions. Of that amount, $8.4 billion will be in the form of direct payments to farmers during fiscal 2000. It is estimated that $5.9 billion, mainly in the form of supplemental production flexibility contract payments, will be paid to farmers in calendar year 1999. The remainder was appropriated as disaster payments to assist farmers who had suffered losses due to severe climatic conditions in 1999 and is likely to be disbursed during calendar 2000.

According to USDA's 1998 Agricultural Resource Management Study, 36 percent of all farms received, on average, $11,864 in government payments (table 5). About 70 percent of farming occupation/higher sales, large family, and nonfamily farms received government payments. The larger payments went to the large and very large family farms. (See box on page 18 for farm size descriptions.)

By program, 36 percent of all farms received, on average, $9,121 in production flexibility contract payments, 24 percent received an average $6,207 in loan deficiency payments, and 10 percent received an average $5,832 in Conservation Reserve Program (CRP) payments. Farming occupation/higher sales, large family, and nonfamily farms had the highest participation rates in the production flexibility contract and loan deficiency programs. However, participation in the CRP was more uniform across farm typology. Nonfamily and retirement farms used CRP more than the other types of farms.

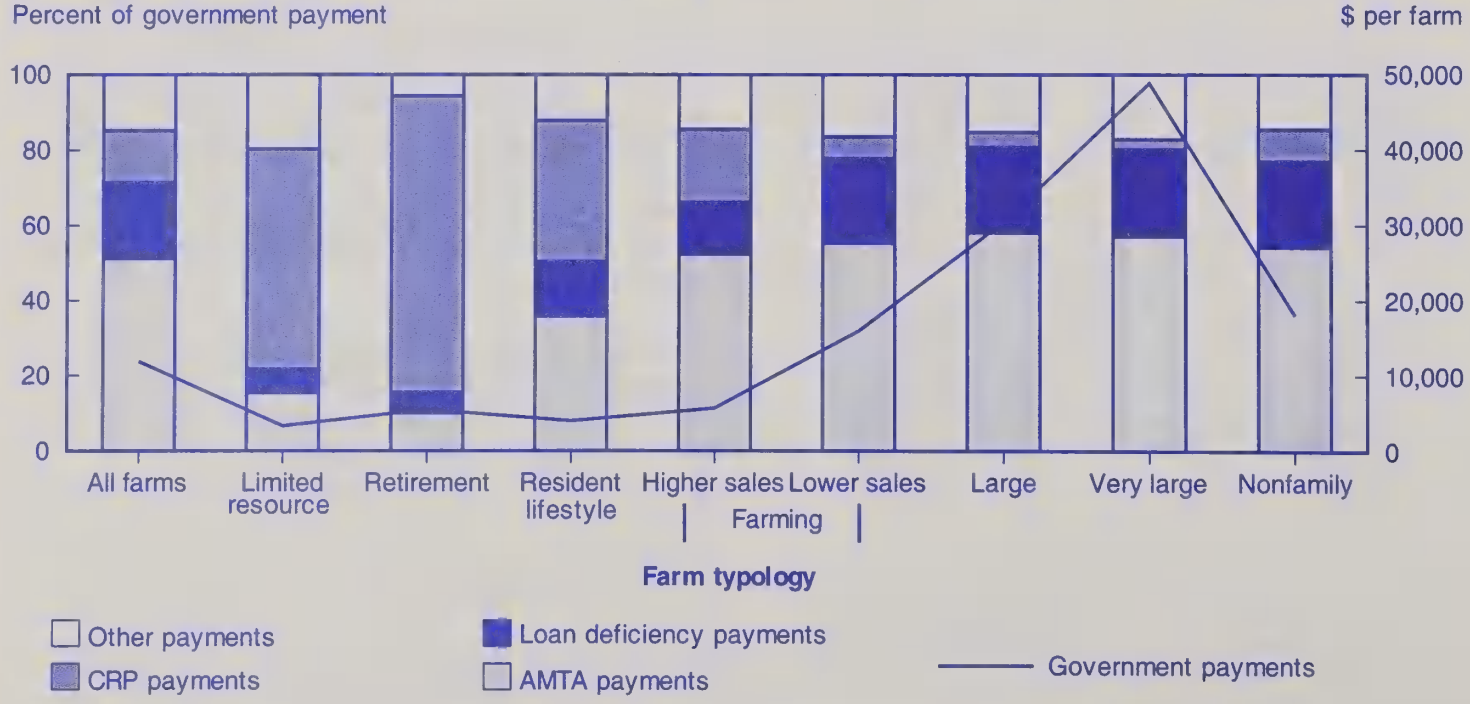
Looking at the composition of payments, half of the payments to all farms were production flexibility contract payments (figure 4). This was the case for farming occupation/lower sales, farming occupation/higher sales, large family, very large family, and nonfamily farms. For retirement farms, nearly 80 percent of government payments were CRP payments. For limited resource farms, nearly 60 percent of government payments were CRP payments.

Total Production Expenses Up Slightly in 2000

Total production expenses are forecast at $192.3 billion in 2000. The 0.7-percent increase in 2000 from the revised forecast of $190.9 billion for 1999 is slightly less than the percentage increase in 1999. Total production expenses in

Figure 4

Composition of government payments and mean government payments for farms receiving payments



Source: Economic Research Service, 1998 Agricultural Resource Management Study, USDA.

Table 5--Average government payments and AMTA payments received by recipient farms, by farm typology, 1998

		Small family farms					Large family farms	Very large family farms	Nonfamily farms
	All farms	Limited Resource	Retirement	Residential lifestyle	Farming occupation/ lower sales	Farming occupation/ higher sales			
Number of farms	2,054,709	146,958	285,995	808,613	377,169	135,748	67,432	50,206	182,58
Farms receiving government payments	743,069	27,253*	77,490	182,068	149,963	96,405	47,546	26,075	136,27
Farms receiving AMTA payments	494,334	14,523*	29,932	109,195	97,360	76,689	40,328	17,864	108,44
Farms receiving loan deficiency payments	287,948	2,308*	12,165	51,234*	50,013	51,767	29,779	13,633	77,04
Farms receiving CRP payments	208,288	16,120*	46,489	57,533	29,638	14,527	8,141	3,747	32,09
Percent of farms	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.
Farms receiving government payments	36.2	18.5	27.1	22.5	39.8	71.0	70.5	51.9	74.
Farms receiving AMTA payments	24.1	9.9	10.5	13.5	25.8	56.5	59.8	35.6	59.
Farms receiving loan deficiency payments	14.0	1.6*	4.3	6.3	13.3	38.1	44.2	27.2	42.
Farms receiving CRP payments	10.1	11.0*	16.3	7.1	7.9	10.7	12.1	7.5	17.
Average government payment	4,291	620*	1,494	902	2,260	11,314	21,451	25,379	13,47
Average government payment by reporting farms	11,864	3,342*	5,514	4,004	5,683	15,931	30,424	48,865	18,05
Average AMTA payment	2,194	96	150	322	1,181	6,247	12,441	14,470	7,30
Average AMTA payment by reporting farms	9,121	967	1,430	2,384	4,575	11,057	20,802	40,667	12,29
Average loan deficiency payment	870	39 #	83*	132	312	2,553	4,890	5,886	3,07
Average loan deficiency payment by reporting farms	6,207	2,476*	1,940	2,081	2,350	6,694	11,072	21,676	7,29
Average CRP payment	591	363*	1,177	338	438	653	840	668*	1,13
Average CRP payment by reporting farms	5,832	3,312*	7,243	4,750	5,574	6,099	6,955	8,953	6,46

* = The relative standard error of the estimate exceeds 25 percent, but no more than 50 percent.

= The relative standard error of the estimate exceeds 50 percent, but no more than 75 percent.

Source: 1998 Agricultural Resource Management Study, Economice Research Service, USDA.

Table 6--U.S. farm sector production expenses, 1996-2000F

	1996	1997	1998	1999P	2000F	Change from 1999 to 2000	
			$ billion			$ billion	Percent
Farm origin inputs	42.7	46.9	44.9	45.2	44.6	-0.6	-1.4
Feed	25.2	26.3	25.0	24.1	23.8	-0.3	-1.2
Livestock	11.3	13.8	12.7	13.9	13.5	-0.4	-2.6
Seed	6.2	6.7	7.2	7.2	7.2	0.0	0.3
Manufactured inputs	28.6	29.2	28.3	29.2	30.2	0.9	3.2
Fertilizer & lime	10.9	10.9	10.7	10.4	10.5	0.0	0.4
Fuels and oils	6.0	6.2	5.6	6.4	7.4	1.0	16.4
Electricity	3.2	3.0	2.9	3.3	3.2	-0.1	-2.2
Pesticides	8.5	9.0	9.1	9.1	9.1	-0.1	-0.8
Total interest charges	13.0	13.5	13.6	13.5	13.7	0.2	1.2
Short-term interest	6.7	7.1	7.1	7.0	7.0	0.0	0.3
Real estate interest	6.3	6.4	6.5	6.6	6.7	0.1	2.1
Other operating expenses	57.6	61.3	62.9	63.3	64.9	1.7	2.6
Repair and maintenance	10.3	10.4	10.4	10.3	10.5	0.3	2.5
Hired & contract labor expenses	17.4	18.6	19.3	20.1	20.4	0.3	1.4
Machine hire & custom work	4.7	4.9	5.5	5.5	5.7	0.2	3.2
Marketing, storage & transportation	6.9	7.1	6.7	6.8	7.1	0.3	4.1
Misc. operating expenses	18.2	20.3	21.0	20.5	21.2	0.7	3.4
Overhead expenses	38.9	39.1	39.2	39.8	38.9	-0.9	-2.4
Capital consumption	19.2	19.3	19.4	19.2	18.9	-0.3	-1.5
Property taxes	6.7	6.9	7.2	6.9	7.0	0.1	1.5
Net rent to non-operator landlords	13.0	12.9	12.6	13.6	12.9	-0.8	-5.6
TOTAL PRODUCTION EXPENSES	180.8	190.0	189.0	191.1	192.3	1.2	0.6
Noncash expenses	15.9	15.7	15.8	15.6	15.3	-0.3	-1.9
Labor perquisites	0.6	0.6	0.6	0.6	0.6	0.0	0.0
Net capital consumption	15.3	15.2	15.2	15.0	14.7	-0.3	-2.0
Cap. cons. exc. dwellings	16.7	16.6	16.7	16.4	16.1	-0.3	-1.9
Landlord capital consumption 1/	1.4	1.4	1.5	1.4	1.4	0.0	-1.1
Dwelling expenses	5.0	5.3	5.4	5.5	5.5	0.0	0.1
Capital consumption	2.5	2.7	2.8	2.8	2.9	0.0	0.9
Interest 2/	0.4	0.4	0.5	0.5	0.4	-0.1	-21.7
Taxes	0.8	0.9	0.9	0.9	0.9	0.0	2.8
Repairs & maintenance	0.8	0.9	0.8	0.8	0.9	0.1	6.5
Insurance	0.4	0.4	0.4	0.4	0.4	0.0	3.7
CASH EXPENSES 3/	159.9	169.0	167.8	170.0	171.5	1.5	0.9

P = preliminary. F = forecast.

1/ Sector capital consumption minus landlord capital consumption equals net of capital consumption excluding dwellings.

2/ 1997-98 input, not forecast formula.

3/ Total expenses minus noncash and operator dwelling expenses.

2000 will equal 84 percent of gross receipts and around 91 percent of gross receipts less government payments. These levels are the highest since the 1980-84 period.

With the slight increase in 2000, total production expenses will have changed less than 1 percent for 3 straight years after rising more than 4 percent each year from 1993 to 1997. A large part of this leveling-off has been due to the fall in cash grain prices, which has helped livestock producers through lower feed expenses. However, the absence of large increases in expenses other than fuel is also helping cash grain producers manage the fall in their income.

The movement in expenses in 2000 is decidedly different from 1999. Purchased livestock expenses are forecast up $1.2 billion in 1999 but should fall around $400 million in 2000. After rising around $750 million in 1999, net rent to nonoperators will fall by about the same amount in 2000. Operating expenses other than labor are forecast down around $500 million in 1999 but will likely rise around $1 billion in 2000 (table 6).

The expected change in input prices is the biggest factor in the movement of production expenses in 2000. The price of imported oil recently has risen substantially, although it will probably fall over the course of the year. On average, fuel costs for 2000 will probably be up at least 15 percent. Feed prices will again fall, but not as much as during each of the last 3 years. Feeder cattle prices will rise more slowly in 2000 than in 1999. The cost of goods and services that com-

prise other operating expenses will rise as the increase in fuel prices works its way through the economy. Prices for crop inputs will be about the same or down somewhat. The major quantity factors affecting production expenses in 2000 are the slower contraction of the cattle inventory, the continued expansion of poultry production, and slightly lower acreage anticipated for major crops.

Livestock-Related Expenses Will Decrease Again in 2000

Feed costs are forecast to fall 1.2 percent in 2000, one-third the rate of decline in 1999. The 2000 prices paid index for feed is forecast down slightly from 1999 as prices for feed grains level off. The decrease in expenses will be due primarily to the continued contraction of the cattle herd and a fall-off in milk production, which will overcome increases in hog and poultry production.

Purchased livestock expenses are forecast to fall in 2000 after rising 9.2 percent in 1999. They will remain 6.4 percent above the 1998 expense, however. The decrease in 2000 will stem from a slower increase in feeder cattle prices and reduced purchases due to fewer cattle on feed and expectations of increased heifer retention later in the year.

Crop-Related Expenses Nearly the Same

Crop-related expenses are currently forecast to be nearly the same in 2000 as in 1999. Planted acreage will again be down a little, but the forecast drop is less than in 1998 and 1999. Seed and pesticide prices will be level or lower. For example, one major seed supplier has announced that its seed prices will be lower or unchanged in 2000 and another announced that it will provide a rebate on technology fees for genetically modified seed. A major supplier of pesticides has announced discounts on one of its major products. Nitrogen prices are at 10-year lows, but will be affected by increases in natural gas prices, which are currently forecast to rise around 8 percent during 2000. Nitrogen prices normally lag behind natural gas prices, so all the increase may not be translated into higher nitrogen prices in 2000. Phosphate and potash prices have fallen since summer and currently stand around 12 percent lower than last year. The potential increase in nitrogen prices and the low level of phosphate and potash prices could move operators to use just-received government payments to purchase fertilizer products before the end of 1999. Current acreage expectations point to less than 1-percent decreases in fertilizer and pesticide applications, unless operators alter production practices to realize input cost savings.

Other Expenses Will Rise Significantly

The increase in fuel prices is forecast to cause fuel expenses to increase $1.2 billion (18.4 percent) in 2000. At $7.5 billion, the nominal expenditure for fuels and oil would be the highest since 1982. Deflated by the National Agricultural Statistics Service's fuel index, the real expenditure would be around the 1986-87 level. Several factors will interact to determine the final level of fuel prices during 2000. The primary factors will be winter weather and stocks held by organizations not in the oil business.

Capital consumption, which represents the cost of capital used in the production of commodities, is forecast to fall in 1999 and 2000 for the first time since 1987. Since capital consumption is calculated at replacement cost, the primary factor driving this expense is prices paid for vehicles, machinery, and building construction. While new tractor and machinery prices rose slightly in 1999 and may rise again in 2000, a large inventory of used equipment has lowered prices for used tractors and machinery on dealers' lots and in auctions. The decreases in capital consumption in these two asset categories will be larger than for other components.

Labor and Interest Expenses To Fall in 2000

The expense for hired farm labor is forecast to rise modestly in 2000. Farm wage rates for the most part will follow rates in the general economy. However, with low unemployment rates, off-farm employment opportunities could create competition for hired farm laborers that puts greater upward pressure on farm wage rates than usual. Certain segments of the construction industry, which competes with agriculture, are booming, including houses and commercial structures and the upgrading of communications and transportation infrastructure.

After falling around $150 million in 1999, interest expenses will increase by about the same amount in 2000. Real estate interest increased in 1999 and will increase in 2000. After dropping $280 million in 1999, nonreal estate interest will be level in 2000 as a drop in outstanding debt for the second straight year offsets a rise in interest rates.

Net rent to nonoperator landlords is forecast to fall $760 million in 2000, almost exactly the amount it is forecast to rise in 1999. Without record-high government payments in 1999, net rent would have fallen as the value of share rent decreased.

Regional Outlook for U.S. Farm Businesses

The persistence of low commodity prices in 2000 will aggravate cash-flow problems for farm businesses in several regions. Relative to 1998, the largest declines in average net cash income are expected in the Mississippi Portal, Eastern Uplands, Southern Seaboard, and the Heartland regions (figure 5 and table 7). Southern areas of the country will be hard hit by dramatic declines in tobacco production and by lower prices for rice, corn, and soybeans. Higher cattle prices and relatively cheap feed should boost average net cash income in the Northern Great Plains and Prairie Gateway regions relative to the 1994-98 average. For most

Figure 5
Farm Resource Regions

Basin and Range

- Largest share of nonfamily farms, smallest share of U.S. cropland.
- 4% of farms, 4% of value of production, 4% of cropland.
- Cattle, wheat, and sorghum farms.

Northern Great Plains

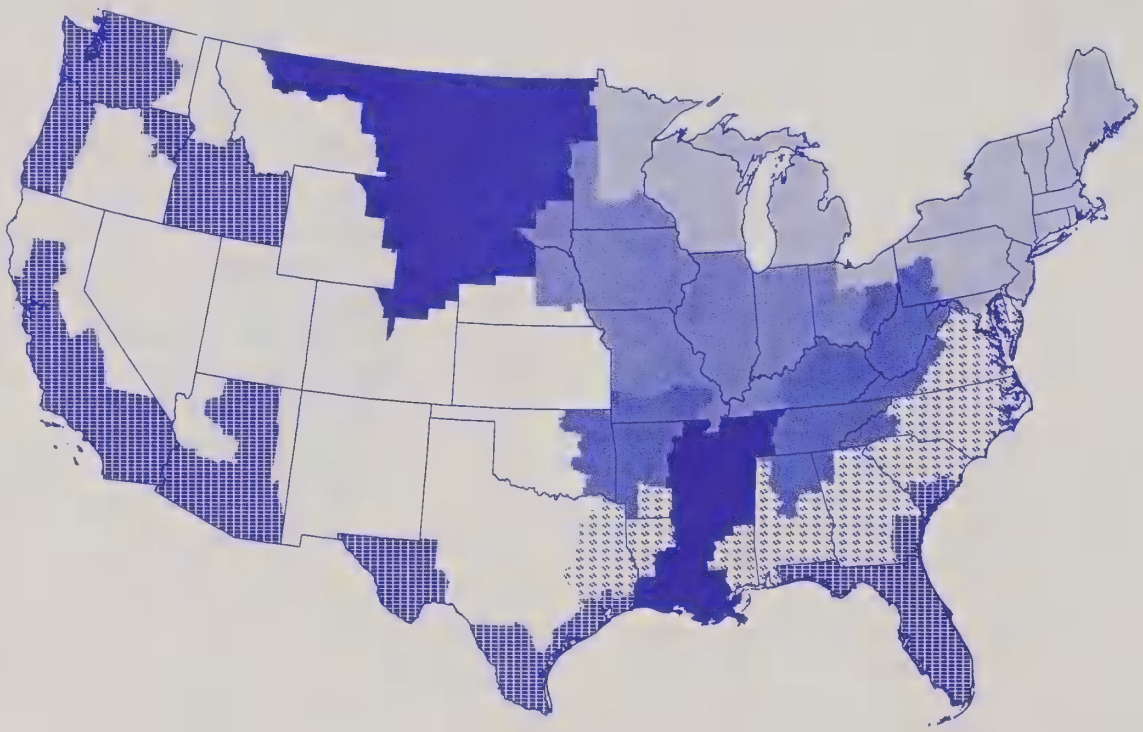
- Largest farms and smallest population.
- 5% of farms, 6% of value of production, 17% of cropland.
- Wheat, cattle, and sheep farms.

Heartland

- Most farms (22%), highest value of production, (23%), and most cropland (27%).
- Cash grain and cattle farms.

Northern Crescent

- Most populous region.
- 15% of farms, 15% of value of production, 9% of cropland.
- Dairy, general crop, and cash grain farms.



Fruitful Rim

- Largest share of large and very large family farms and nonfamily farms.
- 10% of farms, 22% of value of production, 8% of cropland.
- Fruit, vegetable, nursery, and cotton farms.

Prairie Gateway

- Second in wheat, oat, barley, rice, and cotton production.
- 13% of farms, 12% of value of production, 17% of cropland.
- Cattle, wheat, sorghum, cotton, and rice farms.

Mississippi Portal

- Higher proportions of both small and lager farms than elsewhere.
- 5% of farms, 4% of value of production, 5% of cropland.
- Cotton, rice, poultry, and hog farms.

Southern Seaboard

- Mix of small and larger farms.
- 11% of farms, 9% of value of production, 6% of cropland.
- Part-time cattle, general field crop, and poultry farms.

Eastern Uplands

- Most small farms of any region.
- 15% of farms, 5% of value of production, and 6% of cropland.
- Part-time cattle, tobacco, and poultry farms.

regions, at least one in four farm businesses will not cover cash expenses. The exceptions are the Heartland and the Northern Crescent. The largest increases relative to 1998 in the share of farms with negative net cash income occur for the Southern Seaboard and Mississippi Portal (7 percentage points each). The Eastern Uplands and Heartland regions could also experience relatively large increases of 6 percentage points each (figure 6).

Unexpected declines in farm business earnings can lead to debt repayment problems. Relatively high percentages of farm businesses in the Northern Great Plains and Prairie Gateway regions have had persistent debt repayment problems. Even though the Northern Great Plains region has had the highest incidence of debt repayment difficulty, its situation should improve in 2000. In the Prairie Gateway, 18 percent of farm businesses are expected to have debt repayment

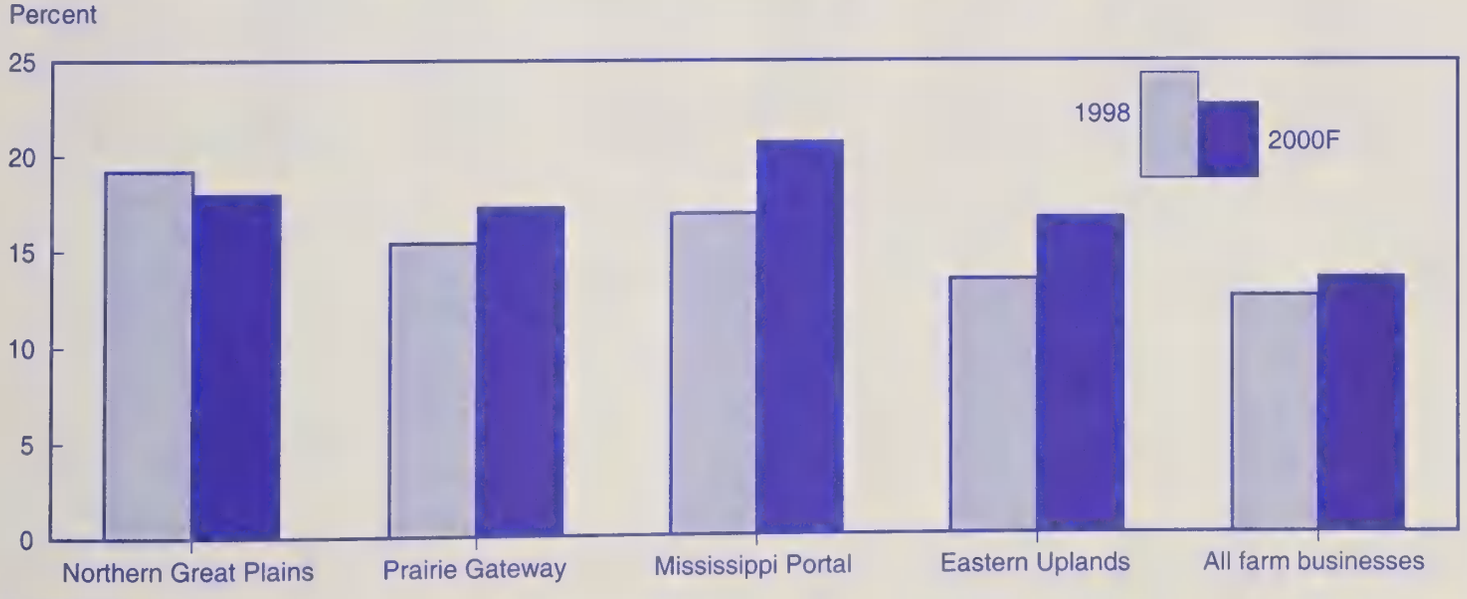
Table 7--Farm business average net cash income forecasts

	Average 1994-98	1998	1999F	2000F	2000/ 1994-98 average	2000/ 1998	Share of U.S farm businesses
	$1,000 per farm				Percent		
All U.S. farm businesses	61.6	78.6	81.8	68.3	11	-13	100
Resource Region:							
Heartland	49.7	58.6	59.8	49.3	-1	-16	31
Northern Crescent	61.0	87.1	88.5	77.1	26	-11	16
Northern Great Plains	48.6	64.1	79.4	60.5	25	-6	8
Prairie Gateway	54.1	70.0	85.3	67.7	25	-3	13
Eastern Uplands	35.5	42.1	41.3	33.7	-5	-20	7
Southern Seaboard	60.1	80.6	71.5	57.5	-4	-29	7
Fruitful Rim	120.9	172.7	173.2	157.4	30	-9	11
Basin and Range	57.2	69.6	77.2	66.4	16	-5	3
Mississippi Portal	78.6	78.5	80.7	48.3	-39	-38	4
Commodity Specialization:							
Mixed grain	51.9	59.5	65.5	45.5	-12	-24	14
Wheat	41.2	38.4	58.1	36.0	-13	-6	4
Corn	51.1	60.7	61.2	44.2	-14	-27	13
Soybeans	39.4	39.2	39.8	27.9	-29	-29	7
Tobacco, cotton, and peanuts	68.8	83.3	68.9	41.6	-40	-50	5
Other crops	79.7	72.9	73.9	50.6	-36	-31	6
Specialty crops	134.0	220.0	218.3	220.7	65	0	8
Beef cattle	39.6	56.6	74.5	70.8	79	25	15
Hogs	60.4	55.1	55.3	56.3	-7	2	5
Poultry	55.8	71.3	72.6	67.3	21	-6	5
Dairy	64.8	95.7	95.3	74.9	16	-22	15
Other livestock	42.0	65.0	58.0	49.8	19	-23	3

F = forecast

Figure 6

Debt repayment problems persist for some farms and emerge in other regions



F=Forecast.
Source: Economic Research Service, USDA.

problems, a slight increase over 1998, but well below 1997 (figure 7). Farm businesses with debt repayment difficulties are expected to increase substantially in the Mississippi Portal region, where the projected share of 20 percent would be the highest of any region in 2000.

Commodity Specialization Outlook for U.S. Farm Businesses

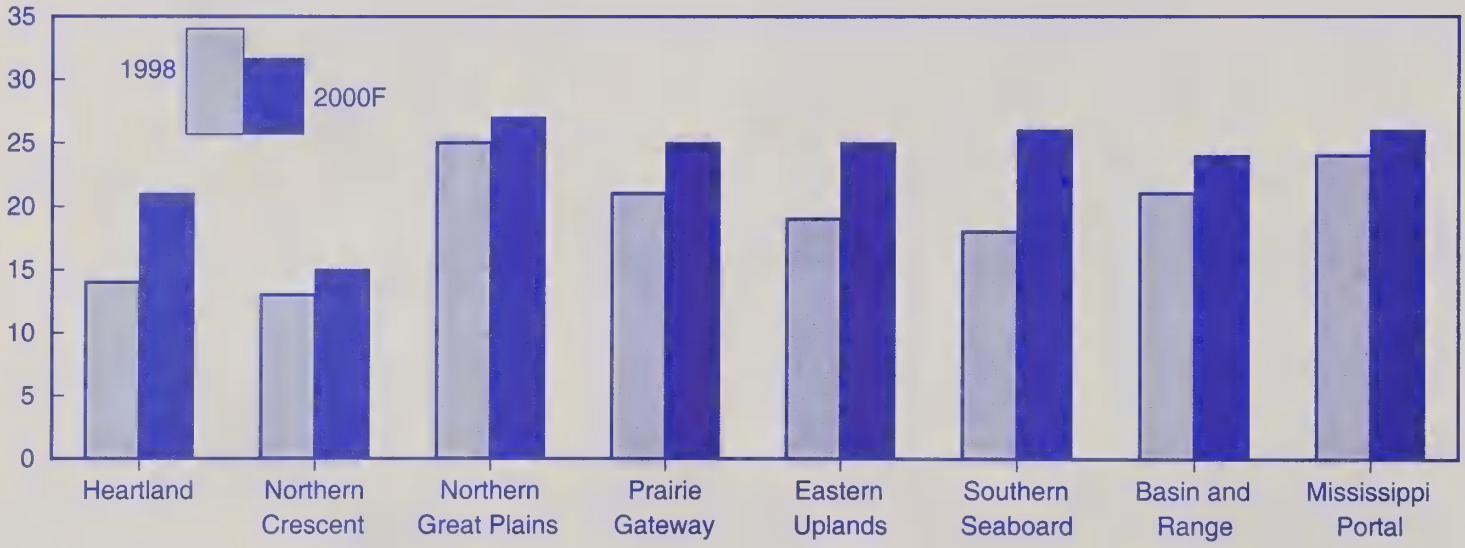
Average net cash incomes for all farm types are expected to be less in calendar year 2000 than in 1999. The story for net cash income is basically the same for all commodity specialties. A stable or, at best, a very modest increase in livestock receipts will not offset the continued erosion of crop receipts, a reduction in government payments from 1999 levels, and a continued modest rise in production expenses.

While reductions in net income will be larger for major row-crop farms, specialty crop and livestock farms will also experience reductions from 1999. When compared with the average income earned during 1994-98, a slightly altered picture emerges. Income for major row-crop farms will be less than the previous 5-year average. Farms with the largest deviation from the 5-year mean will include tobacco, cotton, and peanut farms, general crop farms, and soybean farms. Specialty crop and livestock farms, apart from hog operations, are expected to have incomes in 2000 that exceed their 1994-98 average. Livestock farms will have the largest increase of any farm type.

The reduction in income in 2000 will require farmers to manage tighter cash flows. A higher proportion of debt service capability will be used, eliminating some farmers' credit reserves and exposing a larger share of farms to potential debt repayment problems. Lower incomes rather than substantially rising debt levels or falling asset values will be the key factor that may contribute to rising debt service problems. The greatest increase in use of debt service capacity will be for major cash grain farms, especially those that specialize in wheat and corn.

Figure 7

Farms with negative net cash income increase most in the Heartland and Southern Seaboard



F=Forecast.
Source: Economic Research Service, USDA.

Household Income Forecast Down in 2000

With the fall in farm income, farm households should see their total income drop slightly in 2000. Total household income will continue to be heavily influenced by off-farm earnings.

Farm operators' household income averaged $59,734 in 1998 and is forecast to rise slightly in 1999 at $61,363 but fall in 2000 to $59,350 (table 8 and appendix table 1). A large decline in 2000 income from the farm will be partially offset by an increase in off-farm income. Farm operators' household income has averaged about the same as average U.S. household income during the past three decades (figure 8). Earnings of operators' households from off-farm sources have been steadily increasing, while operator earnings from farming activities have been volatile over time.

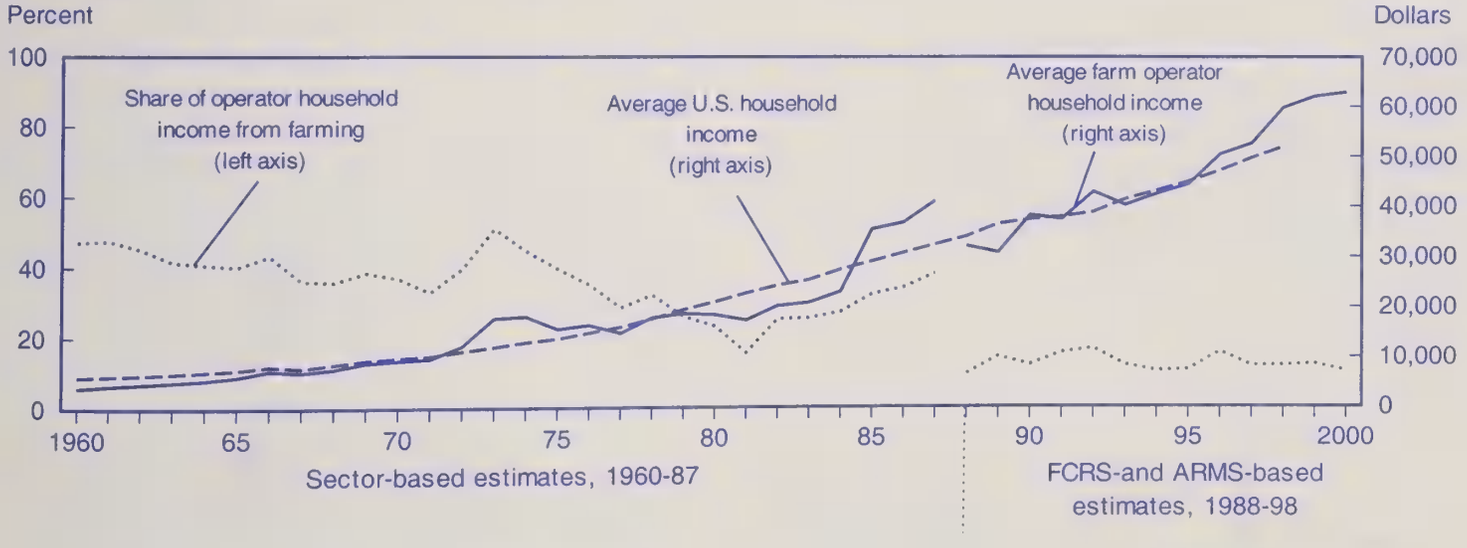
In 1998, off-farm earnings constituted 88 percent of operators' household income for all family farms. Most classes of small family farms (limited-resource, retirement, residential/lifestyle, and farming occupation/lower sales) received negative returns from farming activities (figure 9). Operators of limited-resource and retirement small family farms rely

Table 8--Deriving operator household income, 1998

	$ per farm
Net cash farm business income	14,357
Less depreciation	7,409
Less wages paid to operator and gross farmland rental income	1,180
Less adjusted farm business income due to other households	1,332
	$ per household
Equals adjusted farm business income	4,436
Plus wages paid to operator, net farmland rental income, and other farm-related earnings	2,670
Equals earnings of the operator household from farming activities	7,106
Plus earnings of the operator household from off-farm sources	52,628
Equals average farm operator household income	59,734

Figure 8

Average operator household income, share from farming, and average U.S. household income, 1960-2000



Note: Sector-based estimates assumed that the operator household received all income generated by the farm and shared it with no one else, such as partners and contractors. Thus, the share of operator household income from the farm dropped noticeably when ERS switched to the Farm Costs and Returns Survey (FCRS) and its successor survey, the Agricultural Resource Management Study (ARMS), which collected data on the share of the farm's income actually received by the operator household.

Source: Economic Research Service, USDA, based on data from the Economic Indicators of the Farm Sector, the 1988-1995 Farm Costs and Returns Survey, the 1996-98 Agricultural Resource Management Study, and the Department of Commerce, Bureau of the Census, Current Population Survey.

Defining the Farm Typology

*Small Family Farms (sales less than $250,000)**

Limited-resource. Any small farm with: gross sales less than $100,000, total farm assets less $150,000, and total operator household income less than $20,000. Limited-resource farmers may report farming, a nonfarm occupation, or retirement as their major occupation.

Retirement. Small farms whose operators report they are retired (excludes limited-resource farms operated by retired farmers).

Residential/lifestyle. Small farms whose operators report a major occupation other than farming (excludes limited-resource farms with operators reporting a nonfarm major occupation).

Farming occupation/lower-sales. Small farms with sales less than $100,000 whose operators report farming as their major occupation (excludes limited-resource farms whose operators report farming as their major occupation).

Farming occupation/higher-sales. Small farms with sales between $100,000 and $249,999 whose operators report farming as their major occupation.

Other Farms

Large family. Farms with sales between $250,000 and $499,999.

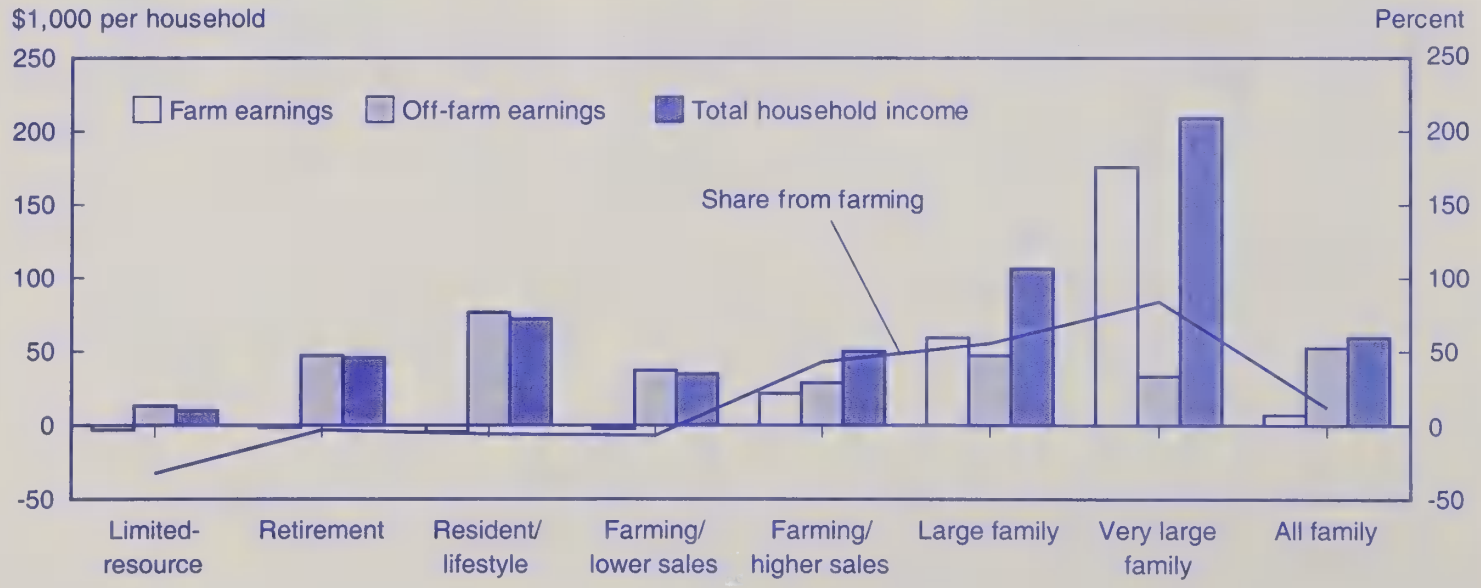
Very large family. Farms with sales of $500,000 or more.

Nonfamily. Farms organized as nonfamily corporations or cooperatives, as well as farms operated by hired managers.

*The $250,000 cutoff for small farms was suggested by the National Commission on Small Farms.

Figure 9

Average operator household income by source and by farm typology, 1998



Source: 1998 Agricultural Resource Management Study, Economic Research Service, USDA.

heavily on Social Security and other public programs for most of their income. In contrast, residential/lifestyle and farming occupation/lower sales small family farms rely primarily on off-farm wages and self-employment income. Although income from farming activities is expected to decline in 2000, little change is anticipated in the total household income of operators of these small family farms.

Households operating the remaining farms rely more heavily on farm earnings. Farming occupation/higher sales farms received 43 percent of operator household income from farm sources, large family farms received 56 percent and very large family farms received 84 percent. Since households operating these larger farms are affected more by changes in income from the farm sector, the household income for the operators of these farms is expected to be largely down.

Farm Operator Household Income by Farm Specialization

Farm households' dependence on farm income varies by farm specialization (figure 10). A farm is considered to be specialized when better than 50 percent of its value of production may be attributed to a specific commodity or commodity group. In 1998, farm households on specialty crop farms (vegetables, fruits, nuts, nursery, and greenhouse) averaged the highest farm operators' household income at $82,274. Income from farming activities provided 25 percent of this income. Farm operators on cash grain farms also received 25 percent of their household income from farming activities. Although operator household income of cash grain farms is estimated be up in 1999, it is expected to drop below 1998 levels in 2000. Operator household income on specialty crop farms is expected to change little over the next 2 years.

Farm households on dairy farms rely most heavily on the farm sector, with about 70 percent of the household income coming from farm earnings. A large decline in operator household income on dairy farms is expected through 2000, due primarily to lower milk prices. Farm households on farms specializing in poultry production receive 46 percent of household income from farming sources. Most poultry production is under contract, stabilizing earnings from the farm. If farm income on beef farms recovers as expected, operator household income on those farms is expected to increase in 1999 and 2000.

Farm Operator Household Income by Region

Farm households' dependence on farm income also varies geographically (figure 11). In 1998, the region with the greatest farming dependence was the Northern Great Plains,

Operator Household Income: What It Does and Does Not Measure

Operator household income is measured according to the definition of income used in the Current Population Survey (CPS), conducted by the Bureau of the Census. The CPS is the source of official U.S. household income statistics. Calculating an estimate of farm household income that is consistent with CPS methodology allows comparisons between the income of farm households and all U.S. households.

The CPS defines income to include any receipts of cash. The CPS definition departs from a strictly cash concept by deducting depreciation, a noncash business expense, from the income of self-employed people. The derivation of operator household income from the 1998 Agricultural Resource Management Study is outlined in table 9 (see appendix table 1 for more details).

Net cash farm business income presented above differs from sector net cash income. Net cash farm business income is a component of farm sector income. It excludes the income of contractors, landlords, farms organized as nonfamily corporations or cooperatives, and farms run by a hired manager.

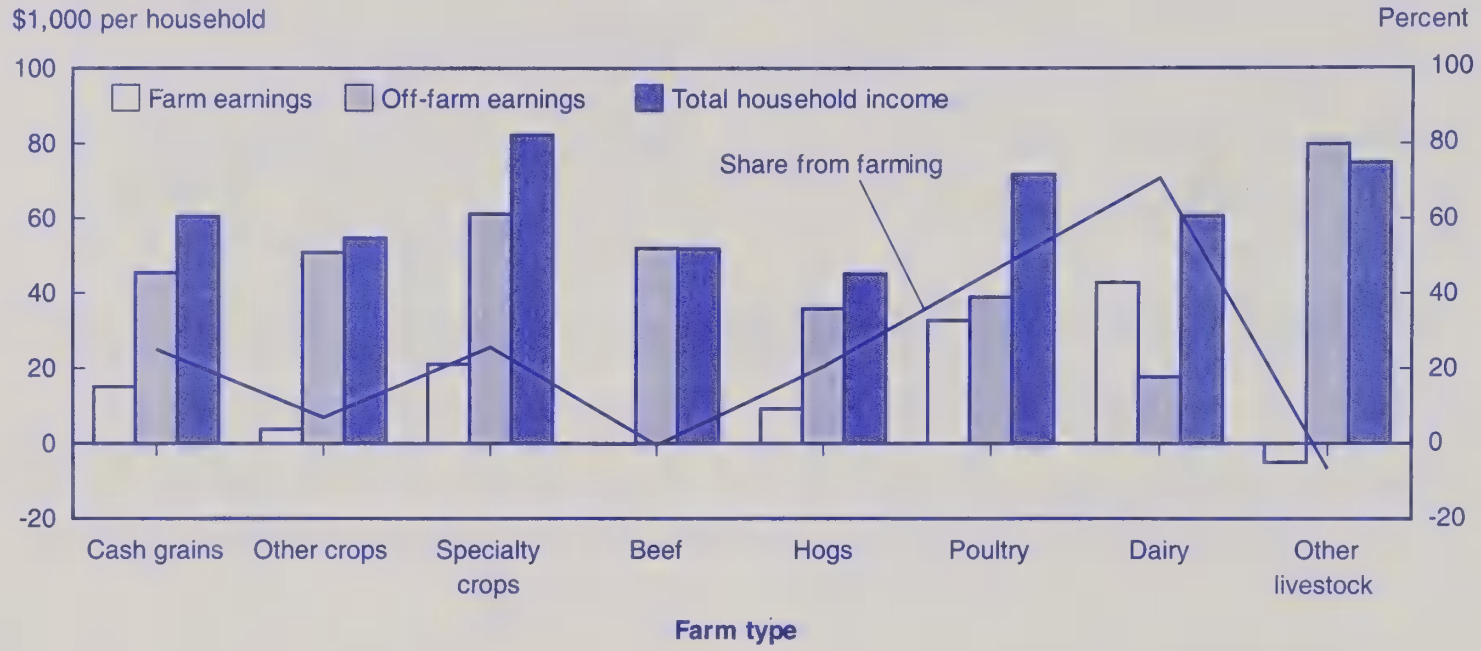
Earnings of the operator household from farming activities are not a complete measure of economic well-being provided by the farm. They leave out some resources the farm business makes available to the household. For example, depreciation is an expense deducted from income that may not actually be spent during the current year. Household income also excludes non-money income, or the imputed rental value of the farm dwelling plus the value of farm products consumed on the farm, largely food and firewood.

Finally, earnings of the operator household from farming activities do not reflect the large net worth of many farm operator households. Most of this net worth is illiquid and not readily available for household spending, since it is largely based on assets necessary for farming. However, some current assets are liquid. Farms may have inventories of crops, livestock, and production inputs that could be sold in emergencies. They may also have accounts receivable that will likely yield cash in a short time.

where about 30 percent of household income came from farm earnings. These households also averaged the lowest household income at $42,777. Farm households in the Heartland region received 20 percent of their income from farm sources. The highest average household incomes were received by farm operator households in the Fruitful Rim and Basin and Range regions. In 2000, household income for farm operators in the Northern Great Plains and Heartland regions is expected to be below 1998 levels as prices of cash grains continue to weaken. On the other hand, household income for farm operators in the Eastern Uplands and Basin and Range regions, who rely more on off-farm income, is expected to be above 1998 levels.

Figure 10

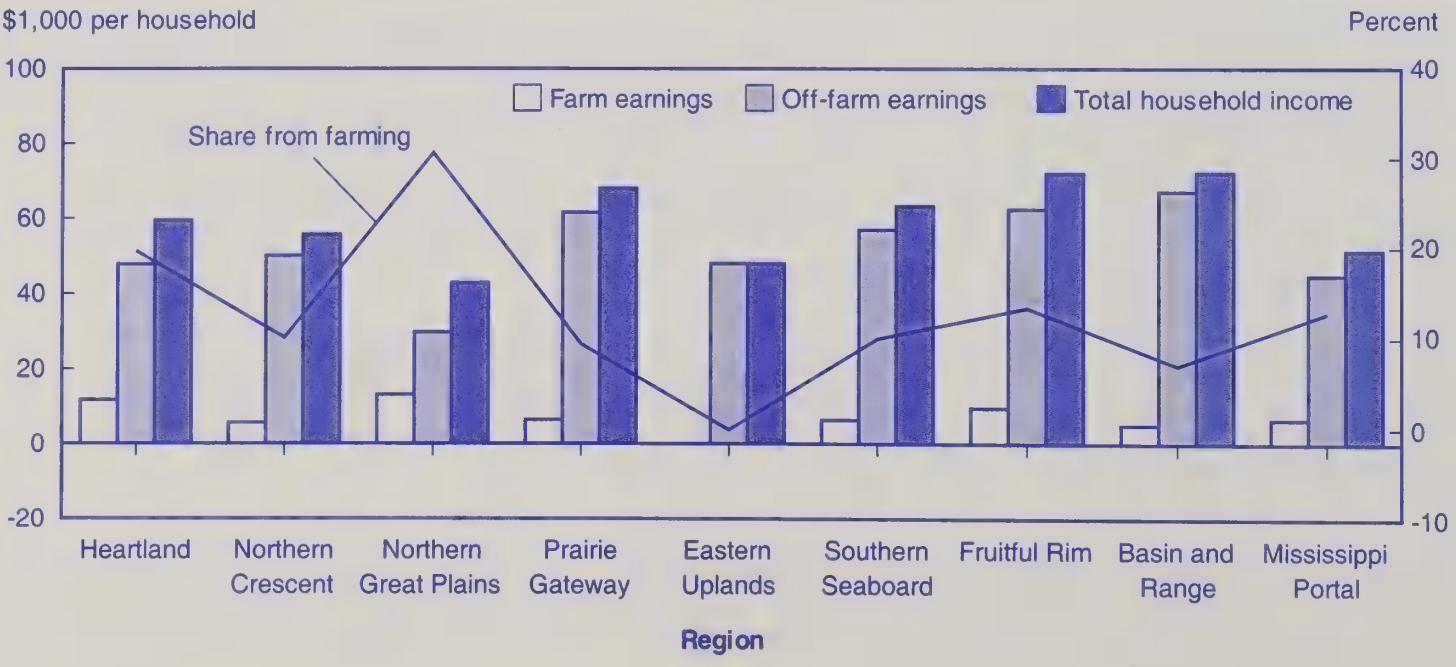
Average operator household income by source and by farm type, 1998



Source: 1998 Agricultural Resource Management Study, Economic Research Service, USDA.

Figure 11

Average operator household income by source and by region, 1998



Source: 1998 Agricultural Resource Management Study, Economic Research Service, USDA.

Debt Repayment Problems Expected To Intensify in 2000

Farm debt is expected to stabilize in both 1999 and 2000 after growing rapidly through 1998.

Farm business debt is anticipated to stand at about $172.5 billion by the end of 2000, down slightly from 1999, which is projected to be slightly below 1998 (table 9). Given anticipated 2000 price and income levels, and uncertainty concerning the timing of price improvements in cash markets for many agricultural commodities, lenders are expected to encourage their farmer clients to improve their balance sheets by applying some of their additional government payments to existing debt. Actual changes in farm business debt in both 1999 and 2000 will depend heavily on the timing and the extent to which farmers use these payments to improve future financial risk positions by reducing outstanding loan balances.

Some farmers may choose to retain a substantial portion of the payments they receive under the recent emergency assistance package, anticipating more limited credit availability in the spring. While institutional lenders report ample funds available for lending to creditworthy borrowers, some current borrowers may have difficulty showing that they can cash flow their production loans, given the commodity prices that are likely to be used in projecting 2000 cash receipts. Any funding gaps may be filled by the increasing number of machinery, seed, and chemicals suppliers who are expanding their traditional use of financing as a means to boost product sales, and are offering financing to meet the farmer's full production credit needs.

Income Changes Not Evenly Distributed

Sector-wide net cash income in 2000 is expected to be almost 16 percent below its 1999 level. The impacts of this decline will not be evenly distributed across all U.S. farm operations, and producers specializing in wheat, corn, and soybeans will likely experience additional financial stress in 2000.

Table 9--U.S. farm business balance sheet, December 31,1994-2000F

Item	1994	1995	1996	1997	1998	1999P	2000F
				$ thousand			
Farm assets	935.5	966.7	1,003.9	1,051.6	1,064.3	1,067.2	1,072.8
Real estate	704.1	740.5	769.5	808.4	822.8	831.1	835.2
Livestock and poultry	67.9	57.8	60.3	67.1	62.0	60.8	60.7
Machinery and motor vehicles	87.5	88.5	88.9	89.0	88.6	86.9	86.3
Crops	23.3	27.4	31.7	32.2	30.1	30.0	30.0
Purchased inputs	5.0	3.4	4.4	5.1	5.3	5.5	5.6
Financial	47.6	49.1	49.0	49.7	55.4	53.0	55.0
Farm debt	146.8	150.8	156.1	165.4	172.9	172.8	172.5
Real estate debt	77.7	79.3	81.7	85.4	89.6	90.3	90.8
Farm Credit System	24.6	24.9	25.7	27.1	28.9	29.5	29.8
Farm Service Agency	5.5	5.1	4.7	4.4	4.1	3.8	3.6
Commercial banks	21.1	22.3	23.3	25.2	27.2	28.1	28.5
Life insurance companies	9.0	9.1	9.5	9.7	10.7	10.9	11.1
Individuals and others	17.5	18.0	18.5	19.0	18.8	18.0	17.8
CCC storage & drying loans	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nonreal estate debt	69.1	71.5	74.4	80.1	83.2	82.5	81.7
Farm Credit System	11.2	12.5	14.0	15.2	16.8	17.1	16.8
Farm Service Agency	6.0	5.1	4.6	4.3	4.0	4.0	3.9
Commercial banks	36.7	37.7	38.3	41.7	42.8	41.4	40.9
Individuals and others	15.2	16.2	17.4	18.8	19.6	20.0	20.2
Equity	788.7	815.9	847.8	886.2	891.4	894.4	900.3
				Percent			
Ratio:							
Debt/equity	18.6	18.5	18.4	18.7	19.4	19.3	19.2
Debt/assets	15.7	15.6	15.5	15.7	16.2	16.2	16.1

P = preliminary. F = forecast.

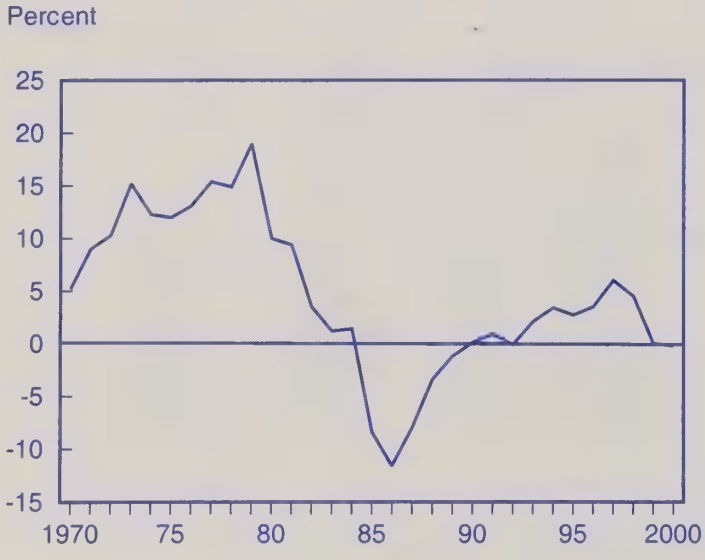
The income that farmers have available to service debt can be estimated by adding farm operator interest expenses to net cash income. Farm business interest expense is anticipated to rise about 2 percent in 2000, as a projected rise in average interest rates offsets the slight decline in farm debt. Given the projected decline in net cash income, it appears that, as a group, farm operators will have less income available to meet 2000 principal and interest payments on their loans. Furthermore, those operators experiencing substantially reduced income may experience difficulty in meeting their debt service requirements.

Debt Expected To Stabilize in 1999 and 2000, After Growing Rapidly Through 1998

The expected debt stabilization in 1999 will follow 6 consecutive years of rising farm debt (figure 12). From the beginning of 1993 through the end of 1998, farm debt rose almost $34 billion, or 24 percent. Almost half of the gain, about $16 billion, occurred in 1997 and 1998.

Farmers use credit as a source of capital to purchase land, technology, and equipment, which, when appropriately combined, can lead to improved productivity and higher profits. The current Farm Act allows farmers greater flexibility in determining which combination of commodities to produce to maximize profit on their individual operations. The rise in loan balances in 1997 and 1998 can be at least partially attributed to farmers' positive views about the future of U.S. production agriculture, given its assumed comparative advantage in liberalized global markets. The continuing relative strength in farmland markets and rental rates also supports this optimism.

Figure 12
Year-to-year to changes in farm debt



1999 and 2000 forecast.
Source: Economic Research Service, USDA.

Balance Sheets Have Improved

Despite the increase in debt in recent years, farm business balance sheets have shown steady improvement throughout the 1990s, especially since 1992. Equity positions have generally improved, and debt-to-asset ratios have declined, as the increase in farm business debt has been more than offset by the rise in the value of farm business assets.

The value of farm real estate has risen more than 30 percent from 1992 through the end of 1999, while farm mortgage balances have increased less than 20 percent. As a result, the degree of U.S. farmland leverage has declined substantially, providing most producers with an added equity cushion to lessen the impact of short-term declines in income.

Farmers' Use of Repayment Capacity To Rise in 2000

The anticipated decline in net cash income in 2000 will likely push farmers to use available credit lines more fully. Lenders generally require that no more than 80 percent of a loan applicant's available income be used for repayment of principal and interest on loans. For farm operators, this income available for debt service (measured as net cash income plus interest) effectively limits the maximum loan payment the farmer could make. Given current market interest rates and an established repayment period, the maximum debt that the farmer could carry with this loan payment can be determined. Using current bank interest rates and a 7-year repayment period, maximum feasible debt conceptually measures the line of credit that could be available to farmers.

Farm debt repayment capacity use (DRCU—actual debt expressed as a percentage of maximum feasible debt) effectively measures the extent to which farmers are using their available lines of credit. This ratio indicates that, in 2000, farmers are expected to use more than 66 percent of the debt that could be supported by their current incomes (figure 13). Farmers used about 59 percent of this hypothetical credit capacity in 1998. The infusion of government payments in 1999 boosted net cash income, increasing the level of debt that farmers could service and reducing the measure of debt repayment capacity use to 56 percent.

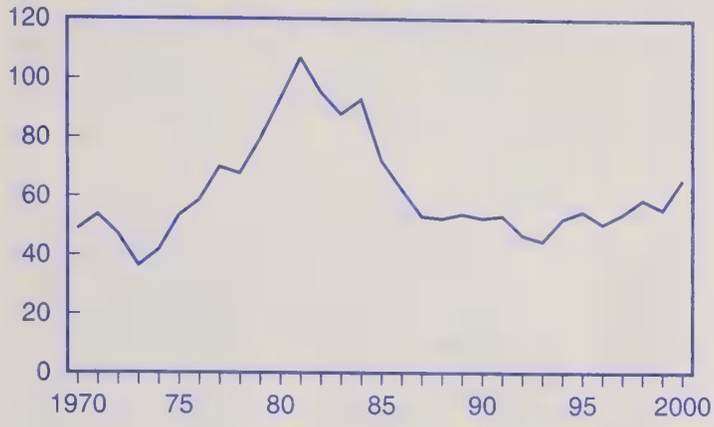
The effects of expected relatively favorable interest rates and reduced debt in 2000 will not offset the effect of lower net cash income, which is why the use of debt repayment capacity is expected to rise to 66 percent. While this measure remains relatively low compared with the levels it attained in 1977 through 1985, its projected 2000 value will be the highest since 1985.

Repayment Difficulties Vary by Region

Farmers usually do not begin to experience repayment problems until their operation carries a debt level that is substan-

Figure 13
Debt repayment capacity utilization

Percent



Actual farm debt relative to a hypothetical maximum debt that could be carried based on repayment capacity. 1999 and 2000 forecast.

Source: Economic Research Service, USDA.

tially higher than they can service with current income. Typically, farm operators meet debt service requirements through the planned sale of commodities produced within the year or production cycle. In times of low income, farmers can meet short term shortfalls by reducing working capital, selling additional inventories, and liquidating financial assets. Meeting debt service obligations does not typically become problematic until DRCU approaches around 120 percent, or the farm operation's debt is 1.2 times the estimated maximum level of debt that it could service using only current income.

Data collected in the 1998 Agricultural Resource Management Study allow regional comparisons of farm financial conditions. Applying 1999 and anticipated 2000 prices for inputs and farm products to ARMS respondents who reported 1998 agricultural sales greater than $50,000, pro forma financial statements allow regional comparisons of likely financial performance under projected conditions.

As evidenced by the declining share of farms with DRCU above 120 percent, the 1999 infusion of government payments helped farm operators in most regions (figure 14). Nationwide, about 20 percent of farms have projected DRCU greater than 1.2 in 1999, down from 22 percent in 1998. With 2000 income assumptions, over 25 percent of farms will report DRCU greater than 1.2.

Only the Heartland and Southern Seaboard showed an annual increase in the share of farms facing potential repayment problems in 1999. This situation is likely to change dramatically in 2000, as anticipated declines in net cash income are likely to generate a rising percentage of farms with DRCU above 120 percent in all regions. However, in the Northern Great Plains, Prairie Gateway, and Basin and Range, the share of such operations in 2000 is expected to be lower than in 1998.

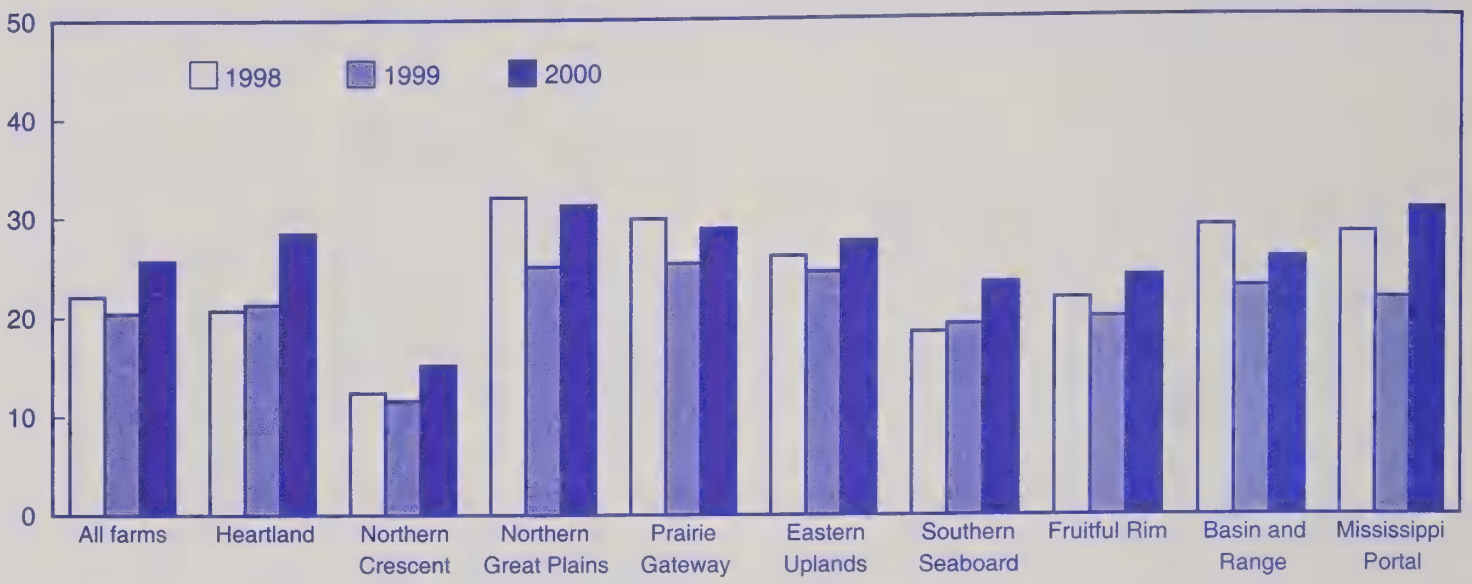
Concurrent with the rise in share of high DRCU farms, the share of farm business debt owed by these operations is expected to rise in 2000. While 22 percent of farms reported DRCU above 1.2 in 1998, these operations owed about 43 percent of all reported debt outstanding at yearend (figure 15). The share of debt owed by high DRCU farms is expected to fall below 40 percent in 1999, then rise above 48 percent in 2000. This pattern—improvement in 1999, worsening in 2000—holds for most regions.

Operators in the Eastern Uplands report the largest share of debt owed by high DRCU farms in each year, with the percentage surpassing 70 in 2000, while Northern Crescent farms report the lowest share, less than 25 percent.

Figure 14

After declining in 1999, the share of farms owing more than 1.2 times estimated maximum debt is projected to rise in most regions in 2000. . .

Percent of farms with DRCU > 1.2

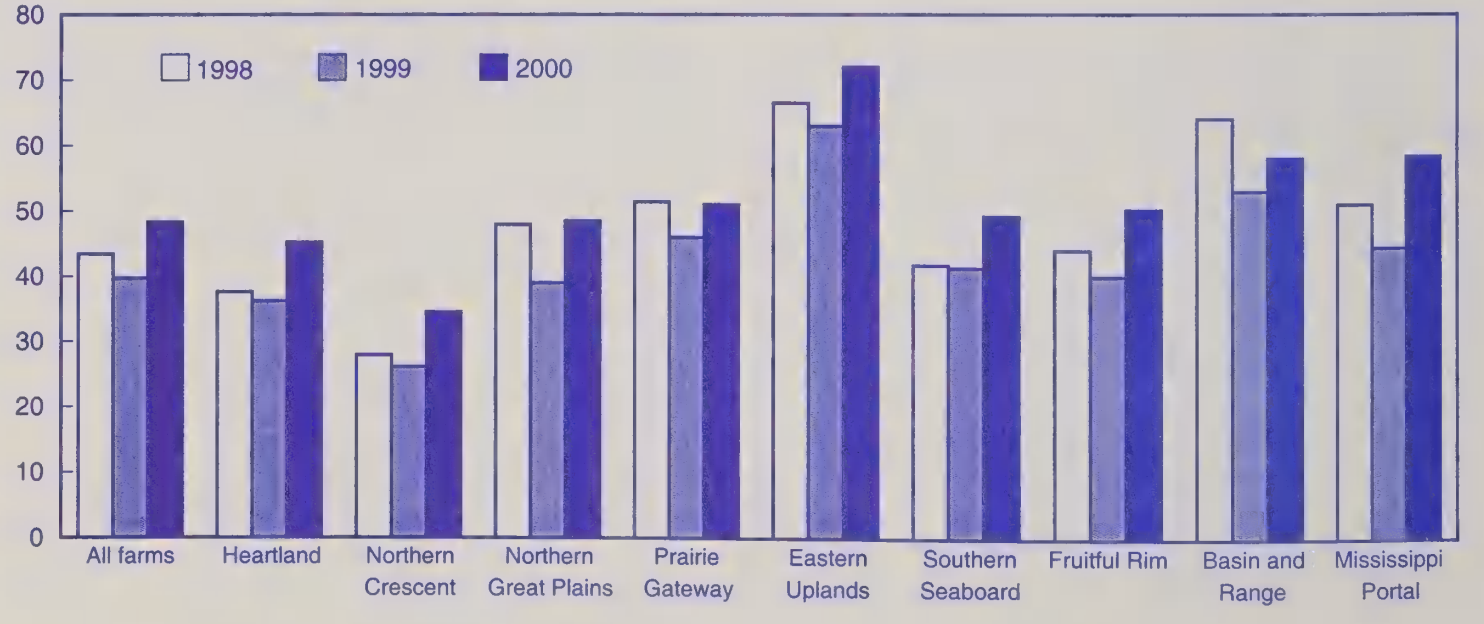


Source: Economic Research Service, USDA.

Figure 15

. . .and the share of debt owed by these farms is projected to increase in all regions

Percent of debt owed by farms with DRCU > 1.2



Source: Economic Research Service, USDA.

Farm Assets and Equity Values Continue Rising Through 2000

Farm business equity is expected to continue rising as farm asset values rise more rapidly than farm debt.

Growth in Farm Real Estate Values Moderates

The value of farm real estate, which represents the largest component of farm assets, is expected to rise one-half percent in 2000, partly due to favorable returns to assets and relatively low inflation and borrowing costs. Although the increase will be smaller than in previous years, the higher value of farm real estate should reflect the counterbalancing of lower farm commodity prices in areas where agricultural uses dominate transactions and those areas where land values are increasing due to urban pressure and other factors.

Farm income and returns to farm assets are still high enough across the country to maintain growth in farmland prices (table 10). The value of U.S. farm business assets and equity is expected to continue upward through 2000. Although commodity prices in 2000 have generally fallen from 1999 levels, government payments have helped support returns to farm assets.

The December 1999 estimates of farm business assets, debt, and equity for years 1993-98 incorporate new data from the 1997 Census of Agriculture since September 1999.

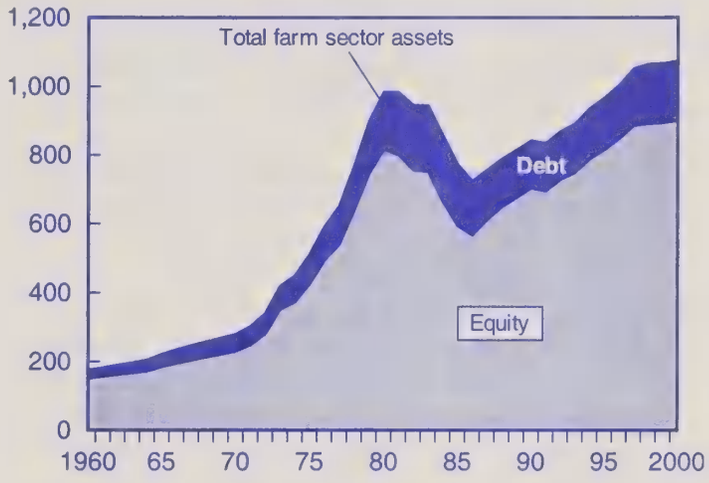
Farm business equity is expected to continue rising as farm asset values rise more rapidly than farm debt. Equity by the end of 2000 is expected to be $901.0 billion, $7.2 billion above 1999, and over $333.2 billion greater than in 1986 ($567.8 billion) (figure 16).

The long-term farm equity comparison is a little different if the numbers are adjusted for inflation. Real farm equity in 2000 deflated by the GDP chain-weighted price deflator, is forecast at $770.1 billion. In 1986, by comparison, farm equity had an inflation-adjusted value of $705 billion, compared with an estimated peak of almost $1,352 billion in 1980. Consequently, farm sector wealth in 2000 is still $582 billion below its inflation-adjusted value in 1980.

Table 10--U.S. returns to farm assets and farmland values, 1998-2000

	1998	1999	2000
		$ billion	
Returns to farm assets	24.0	22.4	20.8
Farmland value	734.1	741.5	745.2

Figure 16
Farm assets, debt, and equity
Equity increasing since 1986



1999 and 2000 forecast.
Source: Economic Research Service, USDA.

Farm Financial Ratios Remain Favorable

U.S.-level financial ratios that track trends in farm sector profitability, solvency, liquidity, and efficiency generally remain favorable in 2000 relative to 1999 (Appendix tables 2 and 3). This reflects modest growth in farm assets and farm equity, a slight decline in returns to farm assets, and relatively low borrowing costs and inflation.

Debt-to-Asset Ratio Continues Downward Trend

Indicators measuring the solvency of the farm sector remain favorable for 1999 and 2000. The debt-to-asset ratio indicates the relative dependence of farm businesses on debt and their ability to use additional credit without impairing their risk-bearing ability. The lower the debt-to-asset ratio, the greater is the farm sector's overall financial solvency. The debt-to-asset ratio is forecast to be 16.1 percent in 2000, compared with 16.2 percent expected in 1999. The share of

debt to total asset value has been declining steadily in the 1990s, after peaking at 23.0 percent in 1985.

Real ("Average") Cost of Debt Financing To Rise from 1999

The real net return on farm business assets is expressed below as RNROA.

RNROA = (returns to farm business assets from current income + real capital gains/total farm business assets) - (interest + real capital gains on debt)/total farm debt

The RNROA is an average, and not a measure of the marginal cost of an additional dollar of borrowed funds at the farm sector level. It is also not a measure of the marginal cost of funds to an individual farm operator. When the RNROA is positive and debt financing for the "average" sector farm is profitable, some farm operators will have marginal returns in excess of the marginal cost of debt, while others will have marginal returns less than their marginal cost of debt. For some, additional debt financing will be profitable; for others, it will not.

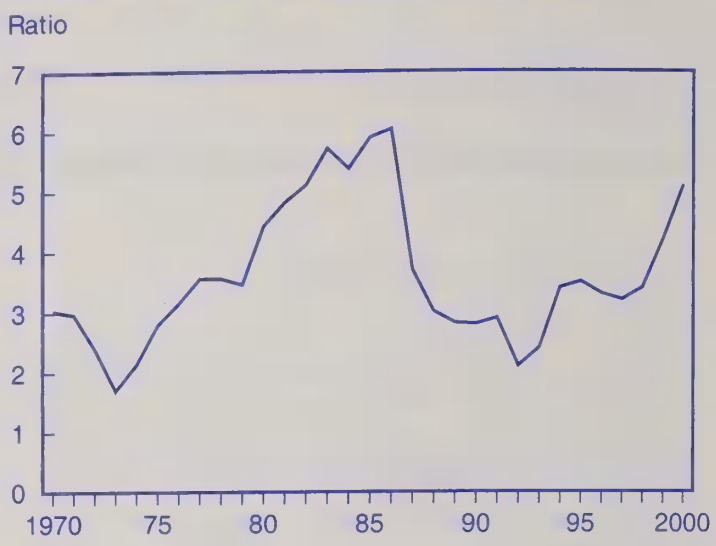
Although the real net return on farm assets is still near historic highs, it is expected to increase from -4.3 percent in 1998 to about -1.8 percent in 1999, and to about -2.6 percent in 2000. This suggests that debt financing in 2000 to support purchases of farmland and other farm capital assets is becoming less financially attractive than in 1999. These factors provide the foundation for continued, but slower, growth in farm real estate values in 2000.

U.S. Farm Asset Values and Debt-to-Net Cash Flow

Net cash flow provides an indication of the total resources available to farm businesses for investment in the farm sector, and to meet current debt obligations. Net cash flow expands upon net cash income by accounting for both internal and external sources of funds.

As farm debt and interest expenses have fallen since the end of the "farm financial crisis" of 1980-86, the ratio of debt to net cash flow (after interest expenses) has fallen from as high as 6.1 in 1986 to 2.4 in 1993 (figure 17). The ratio rose from 3.4 in 1998 to 4.2 in 1999, and is forecast to rise to 5.1 in 2000, considerably above the historic range of 2-3. The ratio means that there was $4.20 of farm debt per $1 of cash flow in 1999, compared with a forecast of $5.10 of farm debt per $1 of cash flow in 2000. According to this measure, farm investors in 2000 have (on average) somewhat less cash resources per dollar of debt to buy farmland and farm machinery and to meet current debt obligations than the "average" farm investor in 1999.

Figure 17
Debt-to-net cash flow
Debt-to-net cash flow rising for 1999 and 2000



1999 and 2000 forecast.
Source: Economic Research Service, USDA.

Land values tend to rise when debt-to-net cash flow is low. This is consistent with the above interpretation of the "debt-to-net cash flow" ratio, which reflects the amount of cash resources that farm investors have to buy farmland and farm machinery and to meet current debt obligations. When the ratio is relatively low, as it has been since the late 1980s, farmland values rise, reflecting the fact that farm investors have relatively more cash resources to invest in farmland. Also, interest rates (and thus interest expenses) have been low, and returns to farm assets have been relatively strong.

However, the rising debt-to-net cash flow ratio for 1998 through 2000 suggests that things have tightened considerably and that farmland values will likely stabilize near current levels in the near term.

Continued demand for agricultural land along the fringes of urban areas and demand for rural land for recreational purposes are also contributing to real estate values, especially in the Northeast and in some Western States.

Nonreal estate values are expected to remain at $238.3 billion in 2000. The value of farm financial assets is expected to rise slightly. The value of machinery and equipment, crops stored, purchased inputs, and livestock and poultry are expected to remain near 1999 levels.

Outlook for 2000: Crop Production Costs To Rise Modestly

Costs of production for major U.S. crops are expected rise at most 3.5 percent in 2000.

According to USDA's most current forecasts for 2000, the average costs of production for major field crops are expected to range from no change for soybeans to an increase of 3.5 percent for cotton. The overall rise in the prices paid index for farm production inputs (crop and livestock inputs) is forecast around 3 percent. The magnitude of the increase ranges from a slight rise for seed, farm machines, and rents to a large increase for fuels, fertilizer, and farm services. The only major production input expected to see lower prices in 2000 is agricultural chemicals, down 3 percent from 1999.

The mix of inputs will determine which crops are most affected by changes in input prices. Production costs will rise $16 to $17 per acre for rice and cotton, while the increase will be only $3 to $5 per acre for other crops (table 11). Intensive use of fuels, farm services, and labor explains the sizable cost increases for rice and cotton. Production costs for soybeans are forecast to remain steady or decline slightly in 2000.

If 2000 yields and prices are near 1999 levels, returns would be more than enough to cover total costs excluding land and unpaid labor for corn and soybean growers, but not enough to cover costs for the other crops listed (table 12). Soybeans show the highest returns, being negative only for the lowest yield and price combination. Rice shows the lowest returns—becoming positive only at the highest yields and prices.

Many factors influence costs of production. Some can be controlled by the operator while others cannot. Numerous agronomic and climatic factors such as soil fertility, input use, timeliness of field operations, weather, and management, for example, influence yield. Some farm operators are adopting new technologies such as precision agriculture that allow them to better manage timing and application of chemicals and limit the number of passes through a field. Limiting field passes reduces fuel and repair costs for machinery, as well as costs for labor and chemicals. Weed and pest control can also be reduced through cropping and tillage practices, adjusting planting dates, and timeliness and proper application of chemicals. These techniques are more management intensive and depend greatly on the management skills of the operator.

Of course, returns in table 12 only represent the average. ERS research shows, for example, that about 60 percent of the corn is produced at or below the average cost (figure 18). For corn growers, regional differences in production systems become important. Most growers in the Heartland typically have a cost advantage over other growers, primarily due to higher corn yields on non-irrigated land.

For U.S. soybeans, about 64 percent would be produced at or below the average cost. The lowest per acre costs for soybean growers are found in the Northern Great Plains where yields can be at or above average depending on the year's weather. Because soybeans have a shorter growing season than corn, cotton, and rice (crops frequently found in rotation with soybeans), there is frequently time to plant soybeans if planting of corn, cotton, and rice crops is delayed or abandoned.

About 66 percent of wheat production should be produced at or below the average cost. Roughly 64 percent of cotton should be produced at or below the average cost.

These costs-of-production forecasts are at the national level and may differ considerably for the individual farmer. They also include the costs of both the farm operator and landlord.

Table 11--U.S. major field crops: production costs forecasts, 1999-2000 1/

Item	Corn		Soybean		Cotton		Sorghum	
	1999	2000	1999	2000	1999	2000	1999	2000
	Dollars per planted acre							
Costs:								
Seed	29.60	29.57	20.17	20.16	18.52	18.50	6.57	6.56
Fertilizer	41.38	42.88	8.75	9.06	33.14	34.34	14.84	15.38
Chemicals	27.48	26.71	26.77	26.02	62.87	61.12	11.93	11.60
Custom operations	11.12	11.36	5.76	5.88	13.65	13.94	5.36	5.47
Fuel, lube, and electricity	24.54	26.92	6.38	7.00	29.73	32.62	14.79	16.23
Repairs	16.69	16.62	9.61	9.57	27.16	27.05	15.04	14.98
Ginning	na	na	na	na	50.40	59.07	na	na
Drying	na	na	na	na	na	na	na	na
Other variable cash expenses 2/	0.31	0.31	0.05	0.05	8.55	8.73	0.00	0.00
Interest on operating capital	3.46	4.02	1.78	2.03	5.59	6.62	1.57	1.83
Hired labor	3.27	3.26	2.03	2.02	37.26	37.18	5.66	5.65
Unpaid labor	31.38	31.31	18.55	18.51	30.29	30.23	18.95	18.91
Land	81.60	83.44	68.02	66.58	47.49	52.21	25.61	28.09
Capital recovery 3/	66.62	66.32	50.78	50.56	89.59	89.19	51.84	51.58
Taxes and insurance	7.10	7.23	6.94	7.07	14.86	15.13	5.43	5.53
General farm overhead	11.61	11.75	13.09	13.26	15.31	15.50	3.72	3.77
Total costs	356.16	361.70	238.68	237.77	484.41	501.43	181.31	185.58

	Rice		Wheat		Barley	
	1999	2000	1999	2000	1999	2000
	Dollars per planted acre					
Costs:						
Seed	24.80	24.78	7.60	7.60	8.33	8.32
Fertilizer	45.61	47.26	17.90	18.54	18.70	19.38
Chemicals	68.62	66.71	6.16	5.99	10.17	9.89
Custom operations	44.66	45.61	6.75	6.89	4.71	4.81
Fuel, lube, and electricity	62.25	68.30	9.69	10.63	12.97	14.23
Repairs	29.16	29.05	13.85	13.79	15.32	15.26
Ginning	na	na	na	na	na	na
Drying	31.18	34.04	na	na	na	na
Other variable cash expenses 2/	11.85	12.11	0.39	0.40	2.09	2.13
Interest on operating capital	8.28	9.67	1.57	1.83	1.82	2.11
Hired labor	38.52	38.43	5.53	5.52	6.04	6.03
Unpaid labor	30.22	30.15	10.89	10.87	8.10	8.09
Land	102.99	107.10	34.81	36.63	34.57	35.21
Capital recovery 3/	79.37	79.00	37.35	37.18	46.60	46.38
Taxes and insurance	38.82	39.53	10.08	10.27	12.49	12.72
General farm overhead	31.40	31.79	5.41	5.48	6.63	6.71
Total costs	647.73	663.53	167.98	171.62	188.54	191.27

na=not applicable.

1/ Forecast as of November 1999 and excludes direct effects of government programs.

2/ Cost of purchased water and baling.

3/ Includes capital replacement and an opportunity cost of capital on farm machines and equipment.

Table 12--U.S. major crops: Returns above land and unpaid labor costs ($/acre) at differing yields and prices

	Yield	Price ($/unit)			
Corn	Bu/acre	1.75	1.89 *	2.25	2.50
	85	-98.22	-86.32	-55.72	-34.47
	105	-63.22	-48.52	-10.72	15.53
	125	-28.22	-10.72	34.28	65.53
	145	6.78	27.08	79.28	115.53
Soybeans	Bu/acre	5.00	5.26 *	5.50	6.00
	30	-2.67	5.13	12.33	27.33
	35	22.33	31.43	39.83	57.33
	40	47.33	57.73	67.33	87.33
	50	97.33	110.33	122.33	147.33
Cotton	Lb/acre	0.52 *	0.60	0.65	0.75
	575	-119.97	-73.97	-45.22	12.28
	625	-93.97	-43.97	-12.72	49.78
	675	-67.97	-13.97	19.78	87.28
	725	-41.97	16.03	52.28	124.78
Sorghum	Bu/acre	1.50	1.74 *	2.25	2.50
	50	-63.59	-51.59	-26.09	-13.59
	60	-48.59	-34.19	-3.59	11.41
	70	-33.59	-16.79	18.91	36.41
	80	-18.59	0.61	41.41	61.41
Rice	Cwt/acre	5.50	6.50 *	7.50	8.50
	55	-223.25	-168.25	-113.25	-58.25
	60	-195.75	-135.75	-75.75	-15.75
	65	-168.25	-103.25	-38.25	26.75
	70	-140.75	-70.75	-0.75	69.25
Wheat	Bu/acre	2.58 *	2.80	3.00	3.25
	30	-46.72	-40.12	-34.12	-26.62
	40	-20.92	-12.12	-4.12	5.88
	50	4.88	15.88	25.88	38.38
	60	30.68	43.88	55.88	70.88
Barley	Bu/acre	1.59 *	2.00	2.25	2.50
	50	-68.48	-47.98	-35.48	-22.98
	60	-52.58	-27.98	-12.98	2.02
	70	-36.68	-7.98	9.52	27.02
	80	-20.78	12.02	32.02	52.02

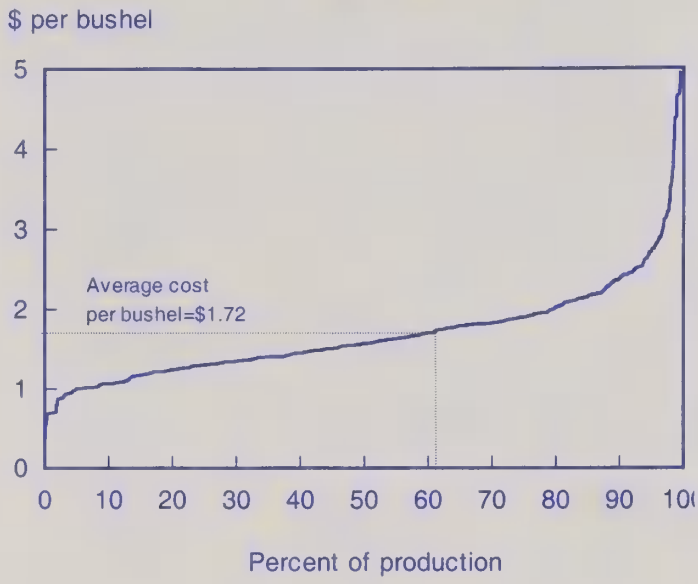
* = Loan rate

Figure 18

Distribution of total costs of production and U.S. average for 2000 1/

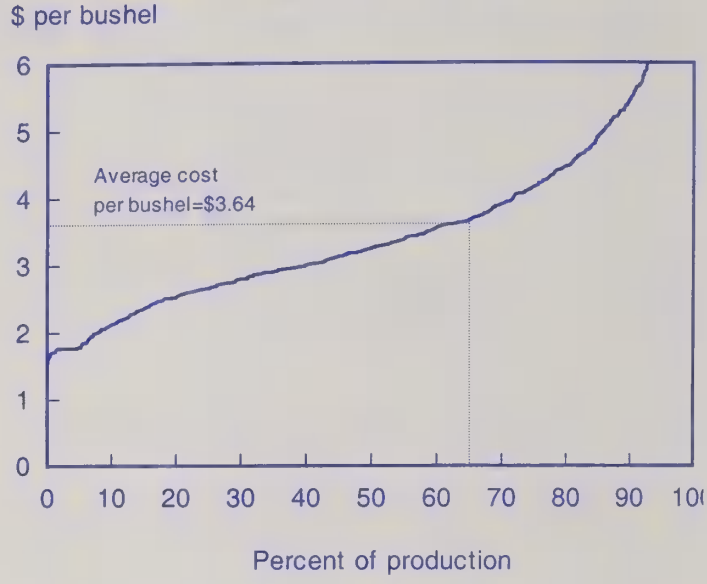
Distribution of corn production, by cost per bushel, 2000 forecast

Some 49 percent of corn farms produced 61 percent of corn at or below the 2000 forecast average cost of $1.72 per bushel



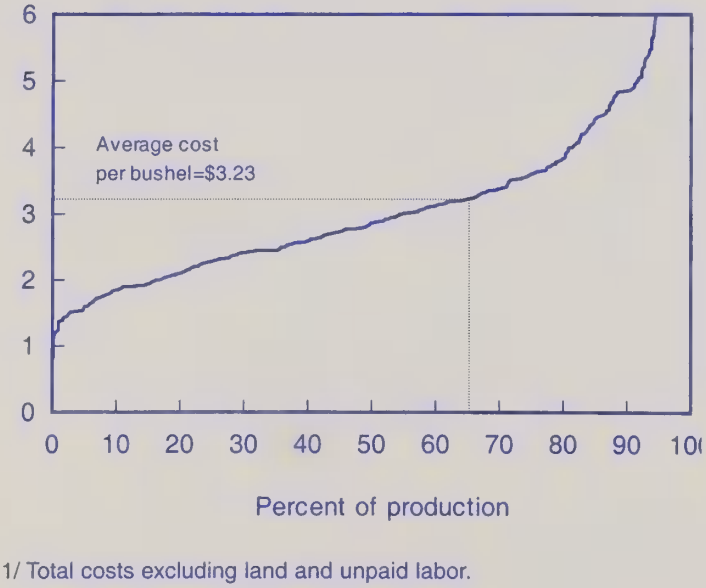
Distribution of soybean production, by cost per bushel, 2000 forecast

Some 49 percent of soybean farms produced 64 percent of soybeans at or below the 2000 forecast average cost of $3.64 per bushel



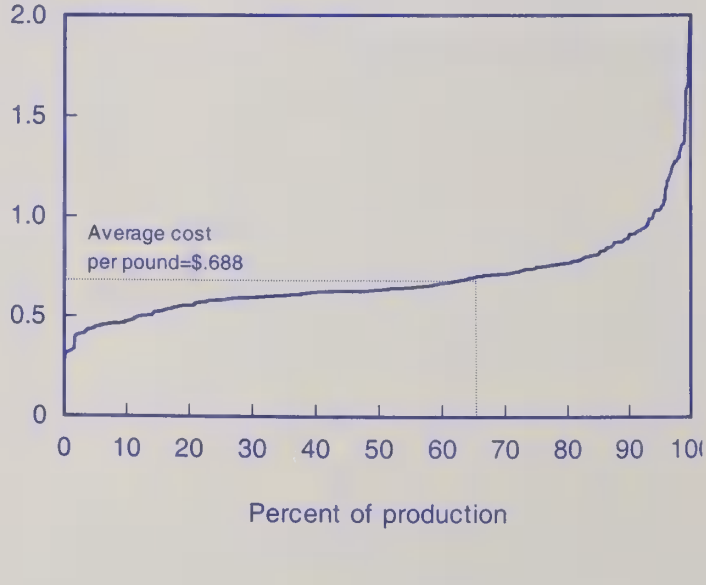
Distribution of wheat production, by cost per bushel, 2000 forecast

Some 61 percent of wheat farms produced 66 percent of wheat at or below the 2000 forecast average cost of $3.23 per bushel



Distribution of cotton production, by cost per pound, 2000 forecast

Some 58 percent of cotton farms produced 64 percent of cotton at or below the 2000 forecast average cost of $.688 per pound



1/ Total costs excluding land and unpaid labor.

List of Tables and Figures

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Appendix table 1--Deriving farm operator household income estimates from the Agricultural Resource Management Study (ARMS) that are consistent with Current Population Survey (CPS) methodology, 1995-2000 1/

	1995	1996	1997	1998	1999F	2000F
			Dollars per farm			
Net cash farm business income 2/	11,218	13,502	12,676	14,357	n.a.	n.a.
Less depreciation 3/	6,795	6,906	6,578	7,409	n.a.	n.a.
Less wages paid to operator 4/	522	531	513	637	n.a.	n.a.
Less farmland rental income 5/	769	672	568	543	n.a.	n.a.
Less adjusted farm business income due to other household(s) 6/	649	1,094	1,505 *	1,332	n.a.	n.a.
			Dollars per farm operator household			
Equals adjusted farm business income	2,484	4,300	3,513	4,436	n.a.	n.a.
Plus wages paid to operator	522	531	513	637	n.a.	n.a.
Plus net income from farmland rental 7/	1,053	1,178	945	868	n.a.	n.a.
Equals farm self-employment income	4,059	6,009	4,971	5,941	n.a.	n.a.
Plus other farm-related earnings 8/	661	1,898	1,234	1,165	n.a.	n.a.
Equals earnings of the operator household from farming activities	4,720	7,906	6,205	7,106	6,919	2,975
Plus earnings of the operator household from off-farm soucres 9/	39,671	42,455	46,358	52,628	54,444	56,375
Equals average farm operator household income comparable to U.S. average household income, as measured by the CPS	44,392	50,361	52,562	59,734	61,363	59,350
			Dollars per U.S. household			
U.S. average household income 10/	44,938	47,123	49,692	51,855	n.a.	n.a.
			Percent			
Average farm operator household income as percent of U.S. average household income	98.8	106.9	105.8	115.2	n.a.	n.a.
Average operator household earnings from farming activities as percent of average operator household income	10.6	15.7	11.8	11.9	n.a.	n.a.

F = forecast. n.a. = not available. * = The relative standard error exceeds 25 percent, but is no more than 50 percent.

1/ This table derives farm operator household income estimates from the Agricultural Resource Management Study (ARMS) that are consistent with Current Population Survey (CPS) methodology. The CPS, conducted by the Census Bureau, is the source of official U.S. household income statistics. The CPS defines income to include any income received as cash. The CPS definition departs from a strictly cash concept by including depreciation as an expense that farm operators and other self-employed people subtract from gross receipts when reporting net cash income.

2/ A component of farm sector income. Excludes income of contractors and landlords as well as the income of farms organized as nonfamily corporations or cooperatives and farms run by a hired manager. Includes the income of farms organized as proprietorships, partnerships, and family corporations.

3/ Consistent with the CPS definition of self-employment income, reported depreciation expenses are subtracted from net cash income. The ARMS collects farm business depreciation used for tax purposes.

4/ Wages paid to the operator are subtracted here because they are not shared among other households that have claims on farm business income. These wages are added to the operator household's adjusted farm business income to obtain farm self-employment income.

5/ Gross rental income is subtracted here because net rental income from the farm operation is added below to income received by the household.

6/ More than one household may have a claim on the income of a farm business. On average, 1.1 households share the income of a farm business.

7/ Includes net rental income from the farm business. Also includes net rental income from farmland held by household members that is not part of the farm business.

8/ Wages paid to other operator household members by the farm business and net income from a farm business other than the one being surveyed. Beginning in 1996, also includes the value of commodities provided to household members for farm work.

9/ Wages, salaries, net income from nonfarm businesses, interest, dividends, transfer payments, etc.

10/ From the CPS.

Sources: U.S. Dept. of Agriculture, Economic Research Service, 1995 Farm Costs and Returns Survey (FCRS), and 1996, 1997, and 1998 Agricultural Resource Management Study (ARMS) for farm operator household data. U.S. Dept. of Commerce, Bureau of the Census, Current Population Survey (CPS), for U.S. average household income.

For information on household income contact: Bob Hoppe (202) 694-5572. Email rhoppe@econ.ag.gov.

Appendix table 2--Farm sector rates of return, 1994-2000F

Item	1994	1995	1996	1997	1998	1999P	2000F
				Percent			
Rate of return on assets	3.7	2.1	3.9	2.8	2.3	3.7	2.1
Real capital gains on assets	1.0	2.0	1.9	2.9	0.7	1.1	2.0
Total real return on assets	4.7	4.1	5.8	5.7	3.0	4.7	4.1
Average interest rate paid on debt	7.7	8.2	8.2	8.1	8.1	7.5	7.7
Real capital gains on debt	2.3	2.2	2.0	1.8	0.8	1.0	1.0
Real cost of debt	5.4	6.0	6.2	6.3	7.3	6.5	6.7
Rate of return on equity	2.9	0.9	3.2	1.9	1.2	1.0	0.8
Real capital gains on equity	1.7	2.8	2.6	3.6	1.1	1.0	1.0
Total real return on equity	4.6	3.7	5.8	5.5	2.3	2.0	1.8
Real net return on assets financed by debt	-0.7	-1.9	-0.4	-0.6	-4.3	-1.8	-2.6

P = preliminary. F = forecast

Appendix table 3--Farm financial measures, 1994-2000F

Ratios	1994	1995	1996	1997	1998	1999P	2000F
Liquidity ratios:							
Farm business debt service coverage	2.43	2.58	2.19	2.16	2.26	2.20	1.95
Debt servicing	0.14	0.15	0.14	0.14	0.15	0.15	0.15
Times interest earned ratio	5.82	4.48	5.75	5.10	4.61	4.62	4.56
Solvency ratios:							
Debt/equity	18.6	18.5	18.4	18.7	19.4	19.3	19.2
Debt/asset	15.7	15.6	15.5	15.7	16.2	16.2	16.1
Profitability ratios:							
Return on equity	2.9	0.9	3.2	1.9	1.2	1.0	0.8
Return on assets	3.7	2.1	3.9	2.8	2.3	2.1	1.9
Financial efficiency ratios:							
Gross ratio	74.2	74.4	73.6	74.3	75.3	75.7	77.6
Interest to gross cash farm income	5.6	5.9	5.8	5.8	6.2	6.1	6.0
Asset turnover	21.5	21.6	22.1	22.1	21.1	21.4	20.7
Debt burden ratio (net cash income plus interest-to-debt)	43.2	43.6	45.7	44.5	40.6	42.4	36.7

P = preliminary. F = forecast

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Program

Thursday, February 24

General Sessions

Opening Plenary
Dan Glickman, Secretary of Agriculture
Guest speakers to be announced

9:30 a.m.
Farm and Trade Prospects for 2000
Keith Collins, USDA Chief Economist
Gus Schumacher, USDA Under Secretary

10:30 a.m.
Panel: The Future of Bio-Engineered Farm Products
Addressing the controversies over safety, acceptance, and trade

12 noon
Panel: Farming in the New Millennium
Crop and livestock producers discuss changes and challenges

1:00 p.m.
Food Price Briefing

Afternoon Breakout Sessions

2:15 p.m. concurrent sessions

Farm Income and Finance Outlook
Outlook by farm type and region; financial impacts of structural changes; rural credit markets

Long-Term Commodity Prospects
The latest long-term projections from USDA and private forecasters

Pros and Cons of Production and Marketing Contracts
What farmers expect, the lessons learned, and future trends

Rural America in the New Millennium
The current situation in rural America and the implications for public policy

4:00 p.m. concurrent sessions

Outlook for WTO Negotiations
Post-Seattle outlook and U.S. goals for the new World Trade Organization round

Biotechnology Issues for U.S. Agriculture
The latest on the approval process for bioengineered crop varieties; the concerns of agronomists, growers, and grain handlers

Farming Strategies for Weathering Tough Times
Methods that prove effective in boosting farmers' returns

Concentration and Structural Change in Agriculture
Evolving organization of farms and agribusiness; antitrust issues; policy response

Forum Dinner - 6:30 p.m.
With featured speaker; preceded by cash bar at 5:30 p.m.

Friday, February 25

Morning Breakout Sessions

8:00 a.m. concurrent sessions

Outlook Sessions: Grains and Oilseeds; Cotton and Fibers; Dairy

The Trade Potential of Sub-Saharan Africa
U.S. Market and investment initiatives; regional views of market development and private investment

Outlook for Labor-Intensive Agriculture
Labor developments affecting farm workers and employers, rural communities, and meat packers

10:00 a.m. concurrent sessions

Outlook Sessions: Livestock and Poultry; Sugar and Sweeteners

New Markets for Bio-Based Energy and Industrial Feedstocks
Demand prospects for bio-based feedstocks for fuel, electricity, and industry

Marketing Information in the Internet Age
How will the Internet change produce price discovery and markets? How does the Agricultural Marketing Service fit in?

The Global Food Market in the 21st Century
Consolidation trends in the U.S. food export industry; international perspective on global food processing, distribution, and retailing

Noon Luncheons

Grains and Oilseeds; Livestock and Poultry; Cotton; Sweeteners; Fruit and Vegetables
Preceded by cash bar, 11:30 a.m.; featured speaker at each luncheon

Afternoon Breakout Sessions

1:45 p.m. concurrent sessions

Potential Impact of E-Commerce
How electronic commerce could alter the business landscape for agriculture, the farm community, and consumers

Balancing Livestock Production with Environmental Quality
Outlook for Federal, state, and local environmental initiatives regarding nutrient management practices of livestock operations

The Changing Market for Organic Foods
What consumers want; changes in organic retailing; venture capital considerations

Animal and Plant Health Issues in Farm Trade
The impact on U.S. exports and on international trade; case studies of opening markets; setting science-based standards for trade

U.S. and International Tobacco Outlook
Trade prospects; follow-up on the tobacco settlement; alternative marketing proposals

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